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DISASTERS *or triumphs at sea are always news and forever will be. Man's continual battling with this element, which is both his friend and his enemy, never fails to produce events of an unusual, startling, or tragic nature. There have been several of these in the news of late.*

The fact that man is never entirely the master of his old adversary has never been more tragically or dramatically emphasized than by the recent loss of the Danish ship Hedtoft. *Here was a ship built specifically for the towering seas and even more towering icebergs that drive before the gales off Southern Greenland in the wild North Atlantic winters. Here, it was off Cape Farewell, several months later in the season, that Martin Frobisher lost his pinnace and four men, and John Davis, the explorer of the Strait, lost another small vessel. But these were sixteenth-century cockleshells.* Hedtoft, *a brand new ship, was built specifically for these winter waters, with all the strongest construction and latest devices and equipment that modern technology could provide. As in the case of* Titanic, *it was claimed that she was unsinkable. This is a rash claim to make when dealing with the North Atlantic, for the last words from her radio were* Vi synker nu, *and the voice was not heard again. Eight days of searching produced nothing but a barrel tossed on the stormy sea.*

Yet, at the same time, the sea can be kind. Farther south, across the

Atlantic from the Canaries floated a balloon with two men and a woman. About a third of the way across it fell into the sea and these three people navigated their craft all the way to the West Indies. How, in the same ocean, could an unsinkable ship be sunk, and a balloon gondola sailed for thousands of miles?

There is another item recently drawn to my attention in, of all places, The Wall Street Journal. *Those of us along the New England seaboard are conscious of the long, local whaling history and the part it played in the economy of our country. We often forget that it is an occupation still going on in other parts of the world. One city that sent out an annual whaling fleet was Vancouver, British Columbia. Because of a breakdown in negotiations over a wage contract, this six-boat fleet will not put to sea for the first time in over fifty years. Last year they brought in the biggest catch in their history;* 774 *whales,* 109 *more than the highest previous year. But plunging whale-oil prices, which have dropped to* 7½ *cents a pound from* 18 *cents in* 1951, *have made it impossible to operate the ships in the face of the crews' demands. The oil today is used for oleomargarine and in cattle feed, while the meat of the great beasts goes largely to the mink farms.*

Personally, I can only say that whale meat is good for more than mink, for I recall with relish the succulent whaleburgers made of the whale tenderloin by Colonel Eugene S. Clark of Sandwich and served to the Peabody Museum staff on a golden day a few autumns ago.

ERNEST S. DODGE

Peabody Museum of Salem

Columbus Landed on Watlings Island

BY CAPTAIN E. ROUKEMA

AFTER almost 470 years the identity of Columbus's landfall and first landing place is still a matter of controversy.

In 1927 the British naval officer R. T. Gould restated the old problem, recapitulated clearly the several solutions offered, and concluded that in all probability Watlings Island is the true *Guanahani*—the *San Salvador* of Columbus—and the place where the Admiral for the first time put foot on the soil of the New World.[1] In 1942 Professor S. E. Morison, of Harvard University, having sailed across the Atlantic in the track of Columbus, decided for Watlings Island as well, but without any reservation.[2] Whereupon Gould, in discussing Morison's view, somewhat unexpectedly expressed the opinion that the selection of Conception Island was to be preferred.[3]

An entirely dissentient voice arose in 1947, when Captain P. Verhoog came out for the Caicos Islands (*Guanahani Again*). He restated his case with some additional arguments in 1954.[4] In 1958 Edwin A. Link and Marion C. Link, in a Smithsonian Institution publication, backed up Verhoog in so far as a first landing place on the Caicos Islands was concerned, but expressed very divergent views on the track Columbus followed from there.[5] This is where the matter rests today. The object of this paper is to prove that Professor Morison's view was and is correct.

I will begin with the puzzle of the Columbian *legua*. Failing the solution of this puzzle, every discussion of the landfall is bound to be unprofitable. I think we may assume that on the ocean crossing Columbus used the *legua* of four Roman or Italian miles. Fontoura da Costa allows the contemporary Portuguese *legua* a value of 3.197 nautical miles (*A Marinharia dos Descobrimentos*). Morison accepts a *legua* of 3.18 nautical

[1] *The Geographical Journal* (1927), I, 403-429.
[2] S. E. Morison, *Admiral of the Ocean Sea* (Boston, 1942), I, Ch. XVI.
[3] *The Geographical Journal* (1943), I, 265.
[4] *United States Naval Institute Proceedings*, Vol. 80 (1954).
[5] *A New Theory on Columbus's Voyage Through the Bahamas.*

miles.[6] For the sake of convenience I accept one of 3.2 nautical miles.

Morison found that when he checked the alongshore distances recorded in Columbus's *Journal* by actual distances, the Admiral's alongshore league appeared roughly equivalent to but 1.5 nautical miles. He found this error so constant that he inclined to the belief that Columbus was consciously using a different 'land' *legua*.[7] Verhoog scoffs at this belief. The Links mention the subject but refrain from expressing an opinion. Yet the hard facts prove Morison's belief to be right.

In the Letter on his First Voyage, as translated by Morison from the Spanish of the first edition, probably printed in Barcelona in mid-April 1493 directly from Columbus's manuscript, the Admiral described his exploration of Cuba (*Juana*) and Hispaniola as follows:

> . . . I followed its coast eastwards 107 leagues up to where it ended. And from that cape I saw toward the east another island, distant 18 leagues from the former, to which I at once gave the name *La Spañola*. And I went there and followed its northern part, as I had in the case of Juana, to the eastward for 178 great leagues in a straight line. . . . I have already said how I went 107 leagues in a straight line from west to east along the coast of the island Juana, and as a result of that voyage I can say that this island is larger than England and Scotland together; for, beyond these 107 leagues, there remain to the westward two provinces where I have not been, one of which they call *Auau*, and there the people are born with tails. Those provinces cannot have a length of less than 50 or 60 leagues, as I could understand from those Indians whom I retain and who know all the islands. The other, *Española*, in circuit is greater than all Spain, from *Colunya* (= Collioure, in the Gulf of Lyons) by the coast to *Fuenterauia* (= Fuerterabía) in Vizcaya, since I went along one side 188 great leagues in a straight line from west to east.[8]

The corresponding passages in the Latin version of the Letter published by Navarrete read in translation:

> . . . I went eastward, skirting the coast for a distance of 322 *millas*, where is the end of it. From there I saw to the east another island distant from Juana 54 *millas*, which I gave the name *Española*. I arrived at it and steered a course to the north, in the same way as in Juana, eastward for a distance of 564 *millas*. . . . I have said that I went in a straight direction from west to east 322 *millas* to arrive at (the end of) the island Juana. According to this voyage and the distance made good, I can assert that this (island) is larger than England and Scotland together. Because beside the said *millas*, and in the part westward, there remain as yet two provinces which I did not explore, and one of which the Indians call *Anam*, the inhabitants of which are born with a tail. They extend for a length of 180 *millas*, according to what those whom I carry with me have told me, and who have much knowledge of all of them. The extent of *Española* is like that of the whole of Spain from *Cologna* to *Fontem*

[6] Morison, op. cit., I, 261.

[7] Ibid., p. 248.

[8] S. E. Morison, *Christopher Columbus, Mariner* (New York, 1956).

Rabidum, from which is easily inferred that one of its four sides which I went along in a straight line from west to east comprises 540 *millas*. . . .[9]

It would appear that Alejandro de Cosco, who translated the original Spanish of Columbus's Letter into Latin, allowed both league (*legua*) and great league (*grande legua*) a value of 3 *millas*. This, however, was the value of the Spanish *legua* on land. At sea the *legua* of 4 *millas* was in use. But Cosco's computations were made rather carelessly. The 107 *leguas* of explored Cuban coast he rendered as 322 *millas*. He should have made it 321 *millas*. The 178 *grandes leguas* of explored Hispaniolan coast he rendered as 564 *millas*. It is obvious that he multiplied 188 instead of 178 by 3. But his rendition of the final 188 *grandes leguas* as 540 *millas* is puzzling. I am inclined to believe that the latter figures are both wrong, and suggest that the true figure was 138 *grandes leguas* as in the Santangel version published by Navarrete.[10]

My interpretation of the passages in question is that Columbus wanted to say that, (a) the total extent of explored Cuban coast, estimated from projecting cape to projecting cape ('in a straight line') was 107 *leguas*; (b) the coastal extent of the two unexplored provinces was thought to be 50 to 60 *leguas*; (c) the distance from Cuba to Hispaniola was 18 *leguas*; (d) the total extent of explored Hispaniolan coast, estimated from projecting cape to projecting cape ('in a straight line') was 178 *grandes leguas*; (e) the extent of Hispaniola 'along one side' from west to east, estimated from projecting cape to projecting cape ('in a straight line') was 138 *grandes leguas*. In connection with the latter figure I wish to remark that the extent of Hispaniola 'along one side' must of necessity have been smaller and not larger than the total extent of explored Hispaniolan coast. Besides the north coast of the island, Columbus visited a small part of its west coast and a larger part of its east coast.

One cannot refrain from asking why Columbus should have used the *legua* for distances along the Cuban coast and for the distance between Cuba and Hispaniola, and the *grande legua* for distances along the Hispaniolan coast. The logical answer would be that by *legua* was meant the 'land' *legua* of three *millas*, and by *grande legua* the 'sea' *legua* of four *millas*. Possibly the Letter was intended to convey this impression. Yet it appears that the Letter's *legua* and *grande legua* had the same value.

Let us begin with Cuba. If we accept the Morison view that the explored coast extended from Punta Brava to Cabo Maysi, the 107 *leguas* are equal to about 173 nautical miles, giving the *legua* a value of 1.62

[9] Navarrete, *Coleccion de los Viages* (1945 ed.), I, 309-323.

[10] Ibid., I, 301.

nautical miles. If we accept the Verhoog view that the explored coast extended from the vicinity of Cayo Paredon Grande (*Guanahani Again*, p. 60) to Cabo Maysi, the 107 *leguas* are equal to about 272 nautical miles, giving the *legua* a value of 2.54 nautical miles.

On the other hand, the abstract *Journal* for 5 December speaks of 120 *leguas 'andado en un parage.'* If by this expression is meant the distance made following the shore, the 120 *leguas* become comparable with the actual alongshore distance of either 192 or 294 nautical miles. In this case

the *legua* values become 1.60 nautical miles according to the Morison view and 2.45 nautical miles according to the Verhoog view.

Of the two views I prefer that of Morison, who drew his conclusions on the spot, and asserted that it is impossible that Columbus could have sailed to Nuevitas, as most books have him do.[11]

The actual distance between Cuba (Punta Pintado) and Hispaniola (Cap du Mole St. Nicolas) is about 45 nautical miles. Columbus made this distance 18 *leguas*, which gives the *legua* a value of 2.50 nautical miles. So it rather appears as if for this 'sea' distance Columbus used the full 'land' *legua* of three *millas*. The number of 'sea' *leguas* of four *millas* each equal to 45 nautical miles is 14. On the whole, however, I incline to the belief that Columbus used 'sea' *leguas* in this case, and, as on other occasions, overrated the distance. It is to be noted that Fernando Colon made the distance at issue only 16 *leguas*.[12]

Let us now turn to Hispaniola. The whole extent of explored coast, from Cap Foux in the west to the anchorage in Bahía Samaná in the east, if measured along the headlands, is about 278 nautical miles. The distance along the north coast alone, from Cap du Mole St. Nicolas in the west to Cabo Viejo Francés in the east, measured the same way, is about 210 nautical miles.

If considered equal to 178 *grandes leguas*, the 278 nautical miles give the *grande legua* a value of 1.56 nautical miles. If considered equal to the presumably preferable 138 *grandes leguas* of the Santangel version, the 210 nautical miles give the *grande legua* a value of 1.52 nautical miles.

To summarize, the, in my opinion, preferable Morison view allows the Cuban coast *legua* a value of 1.62 or 1.60 nautical miles. For the Hispaniolan coast *grande legua* we obtain values of 1.56 and 1.52 nautical miles. So it appears that both Columbus's Cuban coast *legua* and Hispaniolan coast *grande legua* averaged about 1.6 nautical miles, or about half the contemporary 'sea' *legua*, and did not differ to any appreciable extent.

The following examples in connection with *Puerto de la Concepcion*, which Navarrete and Morison both identified with Baie du Moustique, confirm that Columbus's Hispaniolan coast *legua*—the term *grande legua* is not used here—measured considerably less than the 'sea' *legua*.

On 8 December the abstract *Journal* places the island Tortuga at a distance of 36 *millas* opposite *Puerto de la Concepcion*, but on 11 December at a distance of 'at most 10 *leguas*.' Provided 36 *millas* are considered equal

[11] Morison, *Admiral of the Ocean Sea*, I, 349.
[12] *Historie*, cap. XXXI.

to nine *leguas*, the two statements practically agree. Yet the distance in question is actually only about eight nautical miles. So in this instance we get a *legua* value between 0.9 and 0.8 nautical miles.

On 9 December the abstract *Journal* says of *Puerto de la Concepcion*: 'This port has in the entrance 1000 paces, which is a quarter *legua*.'[13] Las Casas confirmed the *Journal* by writing in almost the same words: 'In the entrance this port has 1000 paces, which is a quarter *legua*.'[14] There is a discrepancy in regard to the distance the bay enters the land, which both *Journal* and Las Casas' work give in one place as a quarter *legua*, and in another as 3,000 paces. But there is no discrepancy in regard to the entrance. The British Admiralty *West Indies Pilot* allows the entrance of Baie du Moustique a width of about 3½ cables,[15] but in British Admiralty chart 465 I make the width about half a nautical mile. It follows that in this instance the *legua* value lies between 1.4 and two nautical miles.

I conclude that Columbus deliberately used a 'shore' *legua* of about half the value of the 'sea' *legua*, that is of about 1.6 nautical miles. The reasons which prompted him to do so are anybody's guess. Mine is that he did so in order to represent his discoveries as much larger than they actually were. Of course he was painting the lily. His discoveries were important enough. But I am afraid that thirst for glory got the better of his honesty.

The first example makes it obvious that Columbus's estimate of the distance involved, even if taken to be expressed in 'shore' *leguas*, was badly overrated. This statement is not meant as a criticism of Columbus's qualities as a sailor. Being a sailor myself, I dare say that many of us are liable to make identical mistakes.

Next comes the meaning of the word *isleo*, which the Admiral used twice. Verhoog argues that Columbus employed five different terms for islands, depending upon their sizes. He wrote: '*Isleta* was used for a very small island; *isleo* for a somewhat larger island; *isla, isla bien grande* (his first four islands were so classified); and finally *isla grande mucho*, the superlative reserved for Cuba and Española.'[16]

I find the second distinction arbitrary. Moreover, the statement does not agree with the facts. Columbus also used the terms *isla grande* and *isla grandísima*, both in connection with Island III.

Captain Guillen Tato of the Spanish navy, in *La parla marinera en el*

[13] A *legua* was 4 Roman or Italian miles of 1,000 (double) paces each. The value of a double pace was 1.48 M. Cf. Fontoura da Costa, *A Marinharia dos Descobrimentos*, p. 204.

[14] *Historia de las Indias*, lib. I, cap. LII.

[15] III (1946 ed.), 280.

[16] Verhoog, op. cit., p. 1107.

Diario del primer viaje de Cristóbal Colón, defines an *isleo* as a 'Small solitary island not far from the coast or from another island.'[17] This definition is in accord with the fact that in 1502 Alonso de Hojeda called Cabo la Vela in Colombia *Cabo del Isleo.*[18] The *isleo* close to Cabo la Vela is the 'Farallon,' of which the British Admiralty *West Indies Pilot* says: '*Farallon* is a round islet, about a quarter of a mile westward of the cape.'[19] The Links define correctly: '*Isleo*—a small island close to a bigger one.'[20]

On 21 and 24 December Columbus applied the name *Cabo del Isleo* to the point opposite the *isleo* at the northern extremity of Island IV. Verhoog identifies this *isleo* as Little Inagua. Morison identified it as Bird Rock off Crooked Island. So do I. The Links do likewise, but add a qualifying 'probably.' Against Verhoog's identification pleads that in size the rather insignificant Farallon off Cabo la Vela is certainly much more like Bird Rock than like Little Inagua, which is about eight nautical miles long and five wide. Besides, an island of the latter dimensions can hardly be called a 'small island.'

In view of the foregoing I cannot accept points 1, 6, 7, 8 (provisos 1 and 2), 9 (proviso 2), and 10 of Verhoog's argumentation.[21] I consider them based on wrong premises.

Let us now turn to the identification of the first four islands. In considering the available evidence, the following very judicious observation of Gould should be kept in mind. 'The courses, bearings, distances, and dimensions given in Columbus' journal are, of course, only approximate. One could hardly expect them to be otherwise. He had no handlog, and his dead-reckoning must therefore, even when unfalsified, have been quite sketchy, while the distances and dimensions of the islands which he sighted are probably no better than rough eye-estimates.'[22] I wish to add that all courses and bearings will be treated as being 'true.' The amount of variation obtaining in the Bahamas in 1942 appears to have been negligible.

Island I—Watlings Island

Guanahaní or *San Salvador* was a quite large island *(isla bien grande).* It was very level and had no mountains. It had many bodies of water and in the center a very large lagoon. It was all green. Columbus followed the

[17] 'Isla pequeña y no muy aislada de la costa o de otra. Probablemente, lusismo.'
[18] Navarrete, op. cit., III, 119.
[19] I (1923 ed.), 109.
[20] Op. cit., p. 29, n. 41.
[21] Verhoog, op. cit., pp. 1110-1111.
[22] *The Geographical Journal* (1927), I.

coast to the NNE 'in order to see the other part, which lay to the east.' This implies that he followed the island's west coast. He found that the island had a great ridge of rocks all around. Within this ridge, and presumably in the island's northern part, since a NNE course was followed, was a deep port large enough for 'all the ships of Christendom.' This port had a very narrow entrance. Inside the ridge of rock were some shoal places, but the water did move no more than that in a well. Apparently in the port itself was a small peninsula, which in two days could be made an island, suitable for a fort. Near it was a lovely grove of trees. *After* Columbus had set sail from Island I, and at an unspecified distance from it, many other islands were visible. All these details are given in the *Journal* for 13 and 14 October. For 5 January the same source says that in Island I was found 'a quarry of stones naturally shaped, very fair for church edifices or other noble structures.'

The *Historie* of Fernando Colón specify the island's length as 15 *leguas*. In contradiction with the *Journal*, they mention that the many other islands, among them Island II, were visible from Island I itself. But the additional information, that the point from which the islands were visible was the peninsula suitable for a fort, credits the belief that Fernando Colón misinterpreted the original entry. In any case the *Historia de las Indias* of Las Casas upholds the *Journal* on this point. The same work confirms the island's length of 15 *leguas*, although with the qualification 'a little more or less.' It finally volunteers the information that the water of the central lagoon was fresh, and that the crews drank of it.

Verhoog and the Links mention two more details derived from the *Apologética Historia* (cap. I) of Las Casas, namely that the island had the shape of a *haba*, and was known later as *Triango*. Verhoog translates the word *haba* first as 'bean' (*Guanahani Again*), and later as 'beanpod.'[23] I for one prefer the ordinary meaning 'bean,' and cannot accept Verhoog's point 2, claiming that Island I had the (elongated) shape of a beanpod.

The proposed candidates for Island I have been, (a) Cat Island, (b) Watlings Island, (c) Grand Turk Island, (d) Mayaguana Island, (e) Samana Cay, (f) Conception Island (finally suggested by Gould), (g) the Caicos Islands (advocated by Verhoog and the Links). With the exception of Watlings Island, all these candidates fail to qualify on two or more points.

Cat Island has no large central lagoon and is the highest of the Bahamas. Near its northwestern end a small ridge rises to an elevation of about 400 feet. Grand Turk Island is rather small, about five and one half

[23] *United States Naval Institute Proceedings*, op. cit.

by one and one half nautical miles, and has no reef-sheltered anchorage except on the south side. Besides, at present at least, it is bleak and barren. Mayaguana is thickly wooded and generally low, nowhere exceeding 110 feet. But it has no large central lagoon, and its reef-sheltered anchorage off Northwest Point does not have a narrow entrance. Samana Cay is hilly and uneven, has no large central lagoon and no reef-sheltered anchorage. It stretches E and W and has no coast trending about NNE. Conception Island is generally low but lacking in size. It is only two and one half by two nautical miles. It has a central lagoon but not a large one. What in the chart looks like a reef-sheltered anchorage, off Wedge Point, lies on the southeastern side and has no very narrow entrance.

Verhoog states that there *is* a great ring of reefs surrounding 'Caicos,' and that inside, where the water *is* as quiet as in a water well, there *is* an immense harbor. By this 'immense harbor' he means the open water between East Caicos and Grand Caicos. Verhoog also states that Columbus observed this harbor while he was on his way to 'another part of the island.' But this statement is incomplete. Verhoog should have said that Columbus observed the harbor while following the coast on a NNE course 'to see the other part, which lay to the east.' In other words, Columbus steered NNE along the island's *west* coast. Verhoog, however, makes him steer northward from the implied place of the first landing on Caicos Island's *east* coast to turn *west* later (after passing Cape Comete). He goes on confidently that the narrow entrance Columbus described must have been Lorimer Creek. But three nautical miles southeastward of Lorimer Creek entrance East Caicos attains an elevation of 270 feet in Flamingo Hill. By no stretch of the imagination can East Caicos be called a 'very level' island. Nor, provided that by 'mountains' Columbus meant conspicuous hills, can it be said to be without 'mountains.' Verhoog's suggestion that the 60 *miles* of Las Casas—actually the latter wrote 15 *leguas*—compare well with the length of Caicos Island, which he gives as about 60 nautical miles, is no argument either. What does Verhoog consider 'Caicos Island'? And where do the 60 nautical miles begin and where do they end? From the south point of East Caicos (Grassy Creek) in the east, to Mary Cays in the west, I cannot make the joint length of East, Grand, and North Caicos more than about 45 nautical miles. Curiously enough this distance corresponds rather well with 15 'sea' *leguas*, which are equivalent to 48 nautical miles. But in my opinion Las Casas' 15 *leguas* were not 'sea' but 'shore' *leguas*, and as such equal only to about 24 nautical miles. Verhoog also remarks: 'From San Salvador, Columbus recorded, he could see several other islands in the distance'; and: 'Both

from South Caicos and North Caicos many islands can be seen.' I do not dispute the truth of the second remark, but Columbus's *Journal* places the sighting of many islands *after* and *not before* the departure from *San Salvador* or Island I, so that the fact that from South Caicos and North Caicos islands are visible is entirely irrelevant. Consequently I cannot accept Verhoog's point 5 either.

The Links assert that Columbus's description of *Guanahani* easily fits Caicos, which is 'very large and very flat; with very green trees, and much water. In the center of it, there is a very large lagoon; there are no mountains, and all is so green that it is a pleasure to gaze upon it.'[24] Presumably the 'Caicos' to which the Links refer is East Caicos, along the east coast of which they sailed NNE from Grassy Creek to Cape Comete and thence farther westward. But what about the previously mentioned 270-feet Flamingo Hill? Does this hill make East Caicos really a 'very flat' island? And what about the also previously mentioned *Journal* entry implying a NNE exploration along a *west* coast 'in order to see the other part, which lay to the east'? I am afraid that the Links and their companions were carried away by the marked similarities with Columbus's description they found, and failed to take proper notice of the differences. They found a continuous reef rounding Cape Comete, then curving west and northwest following the direction of the shore, enclosing a sea 'no more disturbed than the water in a well,' and inside which was the beginning of a reef harbor 'large enough for all the ships in Christendom, the entrance to which is very narrow.' The following sentence is quoted in its entirety, but the italics are mine. 'In the distance we could see many islands fading into the horizon and were particularly aware of what appeared to be an unusually large island to the west beyond the *irregular, low rounded hills* and white beaches.' It cannot have been a 'very flat' island which showed 'irregular, low rounded hills.' Beyond doubt it was this view which caused the Links to think mistakenly that it was here Columbus could easily have seen, as he recorded in his *Journal*, 'so many islands that I could not decide to which I would go first.' But I stress once again that the *Journal* places the sighting of the many islands *after* the departure from Island I. According to the Links' view Island I was formed by the whole string of Caicos Islands from South Caicos to North Caicos,[25] so the many islands they saw after having rounded Cape Comete can but have grown together into another part of Island I later on.

On the whole I am afraid that the case for the Caicos Islands is even worse than those for some of the other islands already discussed.

[24] Op. cit., p. 6.
[25] Op. cit., pp. 8-9.

Remains Watlings Island: I find that this island qualifies on all the points mentioned in the *Journal*. It is an *isla bien grande*. It is generally low, nowhere exceeding 140 feet. It has many bodies of water and a very large central lagoon. It is or was extensively wooded. On two sides the coast trends approximately NNE. It has an encircling reef. Grahams Harbor, formed by the reefs north of the island, is a capacious basin, with at present a good boat channel having seven feet of water beside Green Cay, and with some shoal spots. An island which was once a peninsula, suitable for a fort, thrusts out in the eastern corner of this harbor. Morison remarked that the smooth water inside these coral-reef harbors is always a pleasant surprise to mariners, from which remark I infer that on his visit Grahams Harbor showed such an aspect. Near Hall's landing, just north of Columbus's supposed landing place, Morison found the potential quarry of naturally shaped building stones.[26] For fuller particulars on all these points I refer to Morison's well-known *Admiral of the Ocean Sea*.[27] Morison also remarked: 'No islands can be made out from Columbus's anchorage at San Salvador, or for many miles out to sea. . . . I observed that from a point 10 miles SW of San Salvador, Rum Cay looks like six separate islands.'[28]

I admit that although Grahams Harbor is a capacious basin, it is unlikely to have been able to accommodate 'all the ships in Christendom.' But this expression must not be taken literally. On 24 November the *Journal* declares *Puerto de Santa Catalina* (Puerto Cayo Moa) capable of accommodating 'all the ships of Spain,' and on 21 December it declares *Puerto de la Mar de Santo Tomás* (Baie d'Acul) capable of accommodating 'all the ships of the world.' These expressions do no more than imply that all three harbors were of considerable size, but that Columbus considered the harbor in *San Salvador* larger than *Puerto de Santa Catalina* and smaller than *Puerto de la Mar de Santo Tomás*. I am indebted to Professor Morison for informing me that he found Grahams Harbor larger indeed than Puerto Cayo Moa. On the other hand, Grahams Harbor is smaller again than Baie d'Acul.

The situation in regard to the evidence of Fernando Colón and Las Casas is not quite so conclusive as that in regard to the evidence of the *Journal*. The length of Watlings Island, about 13 nautical miles, falls rather short of the about 24 nautical miles indicated, in my opinion, by the 15 ('shore') *leguas*. But these 15 *leguas* cannot have been more than a

[26] A photograph of the curious coral ledge, 'split up into even squares like flagstones or building blocks,' was to be published in the English edition of Morison's *Christopher Columbus, Mariner*.

[27] Chapter XVI.

[28] Ibid., I. 331, note 4.

rough estimate and moreover are subject to the qualifying 'a little more or less.' The example in connection with Tortuga has shown that Columbus was liable to overrate a distance badly. I dare say that in this instance the distance was overrated badly, too.

Then there is the central lagoon. The British Admiralty *West Indies Pilot*[29] says that the lagoons in the interior of Watlings Island are salt. Las Casas wrote that the central lagoon was fresh and that the crews drank there. But neither *Journal* nor *Historie* support him. Moreover, it is curious that there is no mention that fresh water was shipped at *San Salvador*. One would imagine that after the long ocean voyage the first opportunity to replenish the stock of fresh water would have been eagerly welcomed and duly reported. Yet according to the *Journal* fresh water was first shipped at Island III on 16 and 17 October, and later again at Island IV on 22 October. I conclude that Las Casas was misinformed on the subject, and that on this point his information will have to be disregarded. But on another point he appears to have been informed correctly. Island I did have the shape of a *haba* or 'bean.' And if the sharp point of the reefs protecting Grahams Harbor in the north is taken into consideration, Watlings Island may be said to form a rough triangle, which would go to explain the later name *Triango*.

The main objection to Watlings Island is what Gould humorously called 'the singular incident of the light in the night-time.' At 10:00 P.M. on 11 October, four hours before the landfall was made, and one hour before moonrise, Columbus, standing on the stern castle, thought he saw a light. He called Pedro Gutiérrez, a kind of court official, who said he saw it, too. The light was seen once or twice after, and looked 'like a small wax candle, raised and lifted up.' At the time the position will have been about 35 nautical miles eastward of the landfall. Columbus 'was certain that he was close to land.' Yet he omitted to alter the course or the set of his sails. It is *not* said whether the light was seen to port or to starboard.

Gould remarked: 'But it is, on any supposition, very surprising that if Columbus, as he seems to have done, looked on the light as a sure indication of the long-expected land, he should have calmly proceeded under all plain sail and let it go out of sight astern, instead of clewing up and waiting for daylight, or even for moonrise.'[30]

Exactly! Why were the ships not hove to? The answer can only be that Columbus was not convinced that he had seen a light. The relevant *Jour-*

[29] III, 151.

[30] *The Geographical Journal* (1927), I, 417.

nal passage is no proof to the contrary. It was wisdom after the event. It is obvious that the original *Journal* for 11 October was not written up until in the evening of 12 October, *after* the first landing had taken place. And the communication that Rodrigo de Segovia, the *veedor real,* was called but failed to see the light 'because he was not in a place from which it could be seen,' is but a poor excuse.[31] Moreover, why call on two mere landsmen for verification, and not on the seasoned officer in charge of the watch?

Morison agreed heartily with the United States naval officer Murdock, who suggested that 'the light was due to the imagination of Columbus, wrought up to a high pitch by the numerous signs of land encountered that day.'[32] Well, so do I. Columbus *was* expecting land. After the *Salve Regina* had been sung, he exhorted the crew to keep a good lookout for land that night. The *Salve Regina* was sung at 7:00 P.M. or a little after,[33] so the exhortation was given independent of the light supposed to have been seen three hours later.

Of course, if the light really was seen, Watlings Island can never have been Island I. But I believe the light to have been no more than a figment of the imagination. During a long career at sea, I have often heard a lookout sound for a light which remained invisible from the bridge. Asked for an explanation, the lookout usually offered the excuse that for a short time he had thought really that he was seeing a light.

Gould wrote in 1943: 'And with regard to two crucial points, the mysterious light seen in the first watch many miles to windward of the landfall, and the fact that several islands were in sight simultaneously from the latter, it is worth noting that the selection of Conception Cay provides, for both, a reasonable solution, while the choice of Watling island affords none for either.' I contend that the two crucial points are no crucial points at all. The case for the 'mysterious light' is doubtful. The case for the 'several islands' in sight from the landfall is based on an erroneous interpretation of the *Journal*. On the whole the evidence in favor of Watlings Island is undeniable. As Gould himself wrote in 1927: 'Watling Island agrees in every respect with the account in the journal—Conception Cay does not.'

The above considerations make me reject also point 4 of Verhoog's argumentation.

[31] Oviedo related that one of the seamen, a native of Lepe, is said to have seen the light, too, and later, enraged at being defrauded of the reward promised by the King and Queen, went over to Africa and renounced his faith. I place little confidence in this story. According to the *Journal,* only Columbus and Pedro Gutiérrez had seen the supposed light.

[32] Op. cit., I, 297.

[33] Morison, op. cit., I, 224.

I will here say a word on the location of Columbus's first anchorage. Morison argued rightly that no seaman in his senses would have anchored off a lee shore with a sea running.[34] The British admiral Douglas expressed a similar opinion.[35] On 11 October Columbus's ships apparently experienced the roughest weather of the crossing, and from sunset to 2:00 A.M. following made 12 *millas* an hour to the west, which indicates that they had a good stiff breeze from eastward. I submit that common sense alone dictated that in the morning of 12 October an anchorage be sought on the landfall's protected western side. It is true that Columbus did not mention that he anchored off Island I. But the Links observed very much to the point that 'there is little doubt that he did so, as the three ships remained in this locality for nearly three days, and in order to launch the long boats, which were carried over the main hatch, it was necessary to drop the sails so that the main yardarm could be used to swing them over the side.'[36]

Finally I will reply point by point to the seven first objections raised by the Links against the choice of Watlings Island as Island I.

1. There is little possibility that Columbus could have seen a light 4 hours before sighting San Salvador if he were approaching Watling Island, for there are no islands to the east of Watling in any direction, and no fisherman would venture 30 miles out to sea in an open canoe at night with strong winds and heavy seas, even though he were able to maintain a light for the necessary period of time. However, in approaching Caicos it would be simple to glimpse a light on or near Turks Island 4 hours previous to the landfall. Columbus certainly could not have been mistaken when he claimed to see a light, for several others on board also saw it; and he would never have claimed the 10,000 maravedís from his sovereigns without the light as proof that land also was necessarily there.

The two first sentences of the objection have already been answered by my contention that the light will have been imaginary. We do not *know* that several others also saw the light. The abstract *Journal* only names Pedro Gutiérrez, and the subsequent remark, 'Few thought that this was an indication of land,' is significant. I do not share the conviction expressed in the second part of the concluding sentence.

2. The eastern coast of Watling is virtually unapproachable, with heavy seas breaking over thickly scattered coral heads along the rocky shore. There is no mention in the Journal of Columbus's having gone to the western side of the island to land.

[34] Ibid., I, 312.
[35] *The Geographical Journal* (1927), I, 426.
[36] Op. cit., p. 6.

There is no direct mention, but a landing on the western side of the island is certainly implied.

3. Watling Island does not fit the description of San Salvador as well as Caicos. True, it does have a large lake in the middle, but it is not 'very large and very flat' as compared with Caicos. It is 13 miles long, about a third the length of Caicos, while Las Casas describes San Salvador as 20 leagues long; and while Watling might be described as bean-shaped, it is certainly not triangular as Las Casas implies.

I have argued that Watlings Island fits the description much better than 'Caicos.' I have only been able to find that Las Casas described San Salvador as 15 *leguas* long, and these I take to have been 'shore' *leguas*. The final part of the objection has been answered already.

4. Columbus describes 'a great ridge of rocks that encircled the whole of that island.' The only line of barrier reefs on Watling are on the north side where they form a large harbor. Elsewhere there are only scattered coral heads.

Morison, who also visited Watlings Island in person, does not share the view expressed by the Links. He wrote of Watlings: 'The entire island, except for a space of about 1¾ miles on the west or leeward side, is surrounded by dangerous reefs.'[37] This statement is confirmed by an accompanying plan drawn from United States Hydrographic Office chart No. 2805. Apart from this, most of the island's eastern side was not seen by Columbus, so that his description must be necessarily limited to those parts of it he did see.

5. If Columbus landed on the west shore of Watling and went in the ships' boats in a north-northeast direction to explore, this would have brought him to the reef harbor on the north side, which he described as 'no more disturbed than the water in a well.' We found it so rough even in a moderate prevailing wind that we were forced to put two of our party ashore before we dared return across it. Also the commanding officer at a nearby U. S. Naval base told us that his men were forbidden the greater part of the time to go out on it in small boats because of its rough condition. On the contrary we found the reef harbor on the northeast side of Caicos to be sheltered from the prevailing wind.

The objection forwarded by the Links is not decisive. There will, of course, be always days on which the water in Grahams Harbor is as smooth as that within a well, and apparently Columbus struck such a day.

6. We visited a rocky island point on the east side of the harbor fordable from the mainland at low tide which might have been Columbus's 'piece of land which is formed like an island although it is not one,' but unlike Caicos this point had no body of water near it on the shore, and because of the heavy salt spray from the

[37] Op. cit., I, 300.

ocean it is doubtful if 'the loveliest grove of trees that I have ever seen' would have flourished near it. There are none today.

The loveliest grove of trees that Columbus ever saw may have been far enough away from the small peninsula in question to be out of reach of the ocean spray. The *Journal* does not say anything about a 'body of water' near the peninsula.

7. There is no justification for the statement 'I saw so many islands that I could not decide to which I would go first.' Watling is too small to give the impression of many islands within itself, and no other islands are visible in any direction. Even with the added height of the virgin forests of that day, it is doubtful if Columbus could have sighted Rum Cay, the nearest island, whereas the Caicos archipelago is made up of many islands.

The Links misread the relevant *Journal* passage. It is not said that any other islands were visible from *San Salvador* itself.

The four remaining objections, concerning Rum Cay and Long Island, will be dealt with in their proper places.

Island II—Rum Cay

Island II (*Santa María de la Concepción*) lay at an estimated distance of five *leguas* from *San Salvador*. If these were 'sea' *leguas*, the distance was 16 nautical miles, if 'shore' *leguas*, eight nautical miles. No bearing is given, but the *Journal* for 13 October mentions that Columbus had resolved to leave for the southwest the following afternoon. The island extended five *leguas* N and S on the side facing *San Salvador*, and more than ten *leguas* in an E and W direction. These dimensions will have been given in 'shore' *leguas*. In any case Island II was smaller than *San Salvador*. Like the latter it was 'very level, without a single mountain,' had submerged rocks close to the shore, and was very green. From it Island III was visible to the west. Island III is first called a larger island (*isla mayor*), then a large island (*isla grande*), and finally a very large island (*isla grandísima*). So it must have been larger again than *San Salvador*, which only rated as an *isla bien grande*. The *Journal* first estimates the distance from Island II to Island III to be nine *leguas* E and W, and later, after the crossing, corrects this to almost eight *leguas* in the same direction. The latter distance will be more reliable. If expressed in 'sea' *leguas*, it equals almost about 25½ nautical miles, if in 'shore' *leguas*, almost about 13 nautical miles.

The proposed candidates have been, (a) Conception Island (after Cat Island), (b) Rum Cay (after Watlings Island or Conception Island), (c)

the Caicos Islands (after Grand Turk Island), (d) the Crooked Island group (after Mayaguana Island or Samana Cay), (e) Mayaguana Island (after the Caicos Islands), (f) Samana Cay (past Mayaguana Island after the Caicos Islands).

The field is narrowing down. Rum Cay is favorite. The other islands simply do not stand a chance.

Conception Island lies 19 nautical miles from Cat Island, which compares well enough with five 'sea' *leguas*. It is smaller than Cat Island. It is generally low and without conspicuous heights. Its distance from Long Island is 14 nautical miles, about right for eight 'shore' *leguas*, but not for eight 'sea' *leguas*. But the island is far too small. It measures only two and one half by two nautical miles. And it does *not* have any island west of it. Cape St. Maria, the northern end of Long Island, is visible from it. But to the SW by W.

The Caicos Islands do not do any better. South Caicos lies 20 nautical miles from Grand Turk Island. This distance also compares well enough with five 'sea' *leguas*, but the group as a whole is far too large for the dimensions given. It is not inconceivable that at the time a higher growth of trees may have made Little Inagua visible about westward from West Caicos, and the 25½ nautical miles distance between the two islands equals exactly eight 'sea' *leguas*, but Little Inagua cannot ever have been called an *isla grandísima*.

The Crooked Island group has even less in its favor. Acklins Island lies 39 nautical miles from Mayaguana Island, and 19½ nautical miles from Samana Cay. Only the latter distance compares well enough with five 'sea' *leguas*. But Acklins Island alone is larger than either Mayaguana Island or Samana Cay. It should be the other way round. From no part in the group was or is any other island visible to the west. Neither are Acklins Island, Crooked Island, or Fortune Island 'very level' and 'without a single mountain.' All three are distinctly hilly.

Mayaguana Island, Verhoog's choice, has a bit more in its favor, but nevertheless also fails to make the grade. It is smaller than the Caicos Islands as a whole, and is generally low and without conspicuous heights. Its dimensions, 25 nautical miles long by from two to five wide, say 15½ by four 'shore' *leguas*, may have been incorrectly estimated, although they err on the side of relative proportion. But its distance from Providenciales, the nearest of the Caicos Islands, is 35 nautical miles, which is rather much for five 'sea' *leguas*. And not even by Verhoog's own standards—an average height above water of Acklins Island of 150 feet land + 250 feet trees = 400 feet, and a masthead height of some 70 feet (*Guana-*

hani Again, pp. 58, 19)—would Acklins Island have been visible at a larger distance than 33 nautical miles, while the distance Mayaguana Island-Acklins Island, as was said before, is 39 nautical miles. This consideration clinches the matter.

Samana Cay is the choice of the Links, whose theory is that coming from East Caicos Columbus passed by Mayaguana Island without stopping and giving it a name, and that the island which he named *Santa María de la Concepción*, and on which he landed, was Samana Cay, or Atwood Island as it is known today. They base this theory on several passages in Columbus's *Journal*. They quote these passages as follows:

> And as from this island I saw another, and larger, to the west, I clewed sails up to navigate all that day until night, and still was not able to reach the westerly point; this island I named 'Santa María de Concepción' and, about sunset, I anchored near the said point to see if there was gold there. . . .

The Links interpret this passage as meaning that from 'this island,' that is Mayaguana Island, Columbus sighted Samana Cay, named it *Santa María de la Concepción*, and sailed on all the rest of the day until he came to anchor off the cay's southwest point about sunset.

> It was nevertheless my will not to pass any island without taking possession of it, although having taken one, it could be . . . said of all. And I anchored and was there until today, Tuesday, when at dawn I went ashore in the armed boats and landed.

Curiously the Links ascribe to this passage the opposite of the meaning it obviously has. I will quote their words. 'This could be interpreted as an explanation for not stopping at these other islands along the way, as, having taken possession of one, he had taken possession of all, particularly as this statement follows the one in which he said he sailed until night in an attempt to reach the westerly point.'

> . . . as the wind blew more strongly across from the southeast, I didn't want to detain myself, and went back to the ship.

The Links argue that this passage answers the question whether Columbus anchored at the northwest point of Mayaguana Island, as Verhoog believes, or at the southwest point of Samana Cay. They contend that a sudden wind from the southeast would not have disturbed a ship in the shelter of the northwest part of Mayaguana Island, but would have made the anchorage at Samana Cay a risky spot.

> After that I set sail to go to the *other* large island which I was seeing to the west.

The italics are from the Links, who are of the opinion that 'the *other* large island' was Long Island.

The theory is ingenious. Only—to mix metaphors—it does not hold water.

From the supposed departure from Caicos in the early afternoon of 14 October to the supposed arrival off southwest Samana at sunset of 15 October, Table I of the Links has Columbus make 165 nautical miles in about 30 hours at an (for *Santa María* quite satisfactory) average speed of about 5.5 knots.[38] I will refrain from objecting that on 15 October (25 October, present style) 1492, and in the latitude of Samana Cay, the sun would have set at about 5:30 P.M. instead of at 7:00 P.M. as the table makes out. My objections will take other forms.

Following departure from *San Salvador* in the afternoon of 14 October, Columbus saw so many islands that he could not decide to which to go first. Finally he steered for the largest, which he thought to be five *leguas* distant from *San Salvador*. He failed to reach his goal before dark, and lay to during the night, with the idea of setting sail again at daybreak. So says the *Journal*. Yet the Links' table has Columbus make good 40 nautical miles during the hours of darkness!

At daybreak Columbus found the island *more* than five *leguas* away, maybe seven. So just then the ships were even farther away from it than was *San Salvador*. The possible explanations are that during the night the wind had set them to leeward or a current had made them drift. The Links say that they found no currents anywhere they sailed in the Bahamas, in deep, open water, strong enough to affect seriously either time or distance.[39] But a freak current is always liable to occur. Columbus did not reach the island until about midday. If we allow him five and one half hours of daylight sailing for distances of respectively five and one half and seven *leguas*, we find that the ships' average speed during the forenoon of 15 October will have ranged between four and 5.1 *millas* per hour (3.2 and 4.1. knots). Which may be considered a moderate speed. It is significant that Columbus did not complain about the wind. He only remarked that he had been delayed by the tide, that is, by a current. I think this makes it evident that it was a current which had caused the drift of the ships during the preceding night.

I assume that Columbus reached the island at its eastern end. The *Journal* implies so, and moreover Columbus had resolved the day before to continue to the southwest. From this island 'another, larger' one was seen 'to the west.' He crowded on sail all that day until night came,[40] and

[38] Op. cit., p. 12.

[39] Ibid., 12.

[40] Contrary to the Links (op. cit., p. 29, note 29) I am of the opinion that the expressions 'cargar velas' and 'cargué las velas' in the *Journal* for 15 October have to be translated by 'to set sail' and 'I crowded on sail.' The term 'to clew up sails,' that is 'to haul sails by means of lines up to a yard or mast,' means 'to furl sails.' The term is not ambiguous.

about sunset anchored near but not quite at the island's westerly point.

The Links hold that Columbus anchored near the westerly point of the 'larger' island seen earlier to the west. Their view is that he anchored off the southwest point of Samana Cay after having passed by Mayaguana Island. I disagree with them. The *Journal* says clearly that the other, larger island was visible from the island Columbus had reached about noon. But Samana Cay is not even visible from the northwestern end of Mayaguana Island, let alone from a still more easterly position on its coast! And if by exceptional refraction the cay should have been visible from the latter, it would not have been seen 'to the west,' but to the northwest! Finally, there is no *isla grandísima* visible at a distance of nine or eight 'sea' *leguas* to the west of Samana Cay! There is not even the smallest of cays, visible or not, in that direction! The nearest land to the west is Long Island, and it lies completely out of sight at a distance of close to 60 nautical miles.

Samana Cay and Mayaguana Island lie about 50 nautical miles apart. The Links say that at a distance of 13 (nautical) miles 'it was possible to see Samana from the masthead [of their yacht *Sea Diver*]. . . . Eight miles from Samana the whole shoreline could be seen from the deck by eye. It covered at least 45° of the horizon and, with the tops of its hundred-foot hills, looked like a large island.' Which is only another way of saying that the cay was not visible from Mayaguana Island. But the Links admit freely that they found it impossible to see from one island to another anywhere on the (by them) suggested courses of Columbus, although the latter frequently noted that he had seen an island ahead. They grant that several centuries ago the air may have been clearer, which possibility I leave for what it is, and that at the time the additional height due to the tall trees on the islands may have caused the land to be picked up at a greater distance, which is quite likely. Even so, they consider it doubtful whether Columbus could have seen Rum Cay from Watlings Island. Well, their doubts are justified. But then the *Journal* does not say that Columbus did!

The Links try to vindicate their erroneous theory by saying that it is likely that Columbus used the verb (to see) loosely to mean that he understood, perhaps from the captive Indians aboard, that an island was there and that he picked up his next landfall each time after leaving the previous island in the distance. But the Watlings Island theory has no need of such an excuse. It allows each of the *Journal*'s data its proper due. As will be seen in the following paragraphs devoted to Rum Cay.

Rum Cay, the favorite, lies 18 nautical miles from Watlings Island,

which distance compares well with five 'sea' *leguas* (16 nautical miles). It is smaller than Watlings Island. It is generally low and without conspicuous heights, has a number of submerged rocks close to its shores. From it the much larger Long Island is visible to the west. Long Island is also larger than Watlings Island. But there are some discrepancies. Rum Cay's distance due east from Long Island is about 19 nautical miles, which is rather less than almost eight 'sea' *leguas* (almost 25½ nautical miles). Its dimensions are about five by ten nautical miles, again rather less than five and more than ten 'shore' *leguas* (eight and more than 16 nautical miles). But these discrepancies may be due to overestimation on Columbus's part, as appears to have been the case with the single discrepancy in connection with Watlings Island. Moreover, Rum Cay lies SW from the latter island, in the very direction in which Columbus had resolved to continue his discoveries. So at the risk of being accused of twisting facts to suit theories, I make Rum Cay my obvious solution. It will have been noted that for alongshore distances Columbus is thought to have expressed himself in 'shore' *leguas*, and for distances between islands in 'sea' *leguas*.

I have already mentioned that Morison observed how from a point ten (nautical) miles SW of Watlings Island Rum Cay looks like six separate islands. Morison concluded that Columbus steered for the biggest hump, and as usual did not go over his *Journal* later to correct the mistake.[41] I imagine that when on 14 October the sun set, the higher points of Rum Cay still appeared separate, and that Columbus duly recorded the fact when he wrote up his *Journal* that night.

I assume that it was Rum Cay's south coast along which Columbus continued to anchor about sunset near but not quite at the coast's western end. If for the moment we accept Columbus's estimate of the coast's extent, we find that he negotiated almost ten 'shore' *leguas*, let us say nine 'shore' *leguas*, in five and one half hours. This allows the ships an average speed of about 2.6 knots. But actually the distance negotiated will have been almost ten nautical miles, let us say, nine, which makes the ships' average speed slightly over 1.6 knots. By both accounts the force of the wind appears to have decreased markedly since the forenoon. Small wonder Columbus crowded on sail that afternoon.

Columbus landed at dawn on 16 October, but went back to his ship because 'as the wind blew more strongly across from the south-east, I did not want to detain myself. . . .' I interpret this passage as meaning that the originally light SE wind was increasing in force, so that Columbus saw a

[41] Op. cit., I, 331.

chance of setting sail 'to go to the other large island which I was seeing to the west.' This is a clear reference to the 'other, larger' island which had been visible already the day before. The *Journal* for 15 October says that Columbus left the anchorage at about 10:00 A.M. on 16 October, while for 16 October it says that he left the island *Santa María de Concepción* about noon that day. So it looks as if the short distance from anchorage to the island's west point took him no less than two hours, from which I conclude that the wind had gone back on him again. A later *Journal* entry confirms this conclusion. It mentions that for the rest of the day Columbus drifted about in a calm.

I will now deal with the Links' objection in connection with Rum Cay.

8. Rum Cay is too small to answer Columbus's description of the second island: 'The coast which lies toward the island of San Salvador runs north-south and has 5 leagues, and that the other, which I followed, runs east-west and has more than 10 leagues.' Rum Cay is south-west of Watling and does not 'lie toward' it, as does Mayaguana to Caicos.

I have already answered that part of the objection concerned with the island's size, so will now answer the remaining argument only. Yes, I agree that the east coast of Rum Cay does not lie toward Watlings Island. But there is the matter of the previously suggested current. If Columbus left Watlings Island on a southwesterly course, and hove to for the night, a SE-going current might have made him find himself at dawn to the south of Watlings Island and to the east of Rum Cay. In which position Columbus could have said of Rum Cay's east coast that it was lying toward *San Salvador*.

I think that by now the untenability of several theses has been proved. In the first instance I mean the thesis of Navarrete, advocating the route Grand Turk Island-Caicos Islands-Little Inagua-Great Inagua (1824); that of Mackenzie, advocating the route Cat Island-Conception Island-Great Exuma-Long Island (1828); that of Varnhagen, advocating the curious route Mayaguana Island-Acklins and Crooked Islands-Long Island-Crooked Island (1864); and that of Fox, advocating the equally curious route Samana Cay-Acklins and Crooked Islands-Long Island-Fortune Island (1882). I propose not to discuss these long dormant theories any further. Those of their inconsistencies, remaining in the routes after Island II, have been pointed out ably by Gould.[42]

Another untenable thesis is that advanced in 1856 by the British admiral Becher. Becher identified Island I correctly as Watlings Island, but

42 *The Geographical Journal* (1927), I.

sent Columbus, in defiance of the *Journal*, past Rum Cay (Island II) without stopping, on to Island III, which like Mackenzie he identified as Great Exuma. Gould showed up the fallacy of this thesis too, but nevertheless I will demonstrate that Island III could not have been Great Exuma. I will continue to demonstrate the inconsistencies of the theses of Verhoog and the Links. Not because I consider them more tenable than the others just mentioned—I do not—but because they are the latest put forward.

Island III—Long Island

Island III (*Fernandina*) was a larger island than either Island I or Island II. It lay almost eight *leguas* west from the latter, from which it was visible and looked very level and without a single mountain, 'as San Salvador and Santa María.' The part visible was estimated to trend NW-SE for more than 28 *leguas*. After the crossing on 16/17 October Columbus corrected these details. He found that the coast trended NNW-SSE, and said that he 'saw' quite 20 *leguas* of it but had not seen the end. The 28 and 20 *leguas* will have been 'shore' *leguas*. Columbus confirmed that the island was level, and added that it was very green. At a distance of two *leguas*—again 'shore' *leguas*, of course—SSE from the end of the island where the coast turns west there was a 'marvellous port.' Past each side of an *isleo* in the mouth of the port led a very narrow entrance channel. If the port had been deep enough—which it was not—it would have held a hundred ships. The port had a watering place. On 24 October Columbus sighted Island III again, namely its southern side, the western end of which he called *Cabo Verde*.

Even apart from the fact that Island III was visible from Island II, it cannot have been Great Exuma. Although Great Exuma's northeastern side is fairly level, from 50 to 100 feet high, it is skirted by a chain of narrow wooded cays and small barren rocks in places one and one half nautical miles offshore. The *Journal* does not mention either cays or rocks. And even if the island's length, with Little Exuma included, is about 33 nautical miles, which compares favorably with Columbus's quite 20 ('shore') *leguas* (quite 32 nautical miles), it stretches NW-SE instead of NNW-SSE. Near its northwestern end is no harbor as described, nor does the coast turn west from it. Finally, on 24 October Columbus could never have supposed to have sighted Great Exuma's, or rather Little Exuma's southern end, unless he assumed that the Exuma Islands and Long Island were one, which idea Gould deservedly ridiculed.

Acklins Island, Verhoog's choice, does not fill the bill either. Verhoog

argues that Acklins Island lies about the correct distance, 38 nautical miles, from Mayaguana Island, which he considers Island II. Well, eight 'sea' *leguas*—or nine, for the matter of that—may be considered no more than an underestimation of 38 nautical miles. But Verhoog overlooks that Acklins Island is *not* visible from Mayaguana Island, and that in between lie the two French cays, on which the *Journal* is silent. He says that the whole length of the east and north coasts of Acklins Island—including evidently the north coast of Crooked Island—is about 80 (nautical) miles, and adds that Columbus's first estimate was 112 *miles*, altered later to 'more than 80 Columbian *miles*.' The italics are mine. But Verhoog's statement does not represent the facts properly. Columbus did not speak of *miles*. He spoke, in the *Journal*, of '28 *leguas* or more' and 'quite 20 *leguas*,' and these will have to be considered 'shore' *leguas*, respectively equal to '45 nautical miles or more' and 'quite 32 nautical miles.' Besides, the second estimate, committed to paper after the crossing had been made, was evidently meant to correct and replace the rougher estimate made from Island II. Then, once he had made the crossing to Island III, Columbus stated clearly that the *whole* of the coast of which he saw quite 20 *leguas* trended NNW-SSE. Verhoog overlooks this, too. Actually Acklins Island has no coast trending approximately NNW-SSE. On one side its coast trends N and S, but only for about 12 nautical miles, which at most rate eight *leguas*, and 'shore' *leguas* at that. The greater part of its coasts—and those of Crooked Island, which Verhoog apparently includes—trends NE and W by N. Then there is the 'marvellous port' situated two *leguas* from the island's end. Verhoog asserts that it is the shallow opening eight (nautical) miles west of N. E. Point on Acklins Island, which opening the chart calls 'The going through.' But where is the *isleo* in the mouth of this harbor? And where are the two 'very narrow' entrances? I fail to find them. Also, the *Journal* makes it evident that the port was reached *before* and *not after* the end of the NNW-trending coast. Further, Acklins Island and Crooked Island are far from level and without conspicuous heights. They are distinctly hilly. Mount Pisgah, close to the supposed 'marvellous port,' rises even abruptly. No, Acklins Island is out as Island III, too.[43]

Once again there is only a single acceptable candidate, Long Island. Its identification as Island III results automatically from that of Rum Cay as Island II. Long Island is indeed an *isla grandísima* in comparison

[43] The Links remark (op. cit., p. 22) that the barrier reef off 'The going through' between Crooked and Acklins Island kept their yacht more than a mile from shore, making it impossible to see any details of the spot which Columbus described so vividly. They could not even make out an opening in the coast line.

with Watlings Island and Rum Cay. The discrepancy in connection with its distance from Rum Cay has already been discussed. Let us now follow Columbus's track.

Columbus left Rum Cay behind about midday on 16 October. His course toward Long Island appears to have been westerly. Light airs prevented him from closing Long Island before darkness set in. I assume that at sunset Columbus will have seen the island from Cape St. Maria in the north to the point where the coast turns south in the south. He judged this part to trend NNW-SSE, which is approximately correct. That same part presents a level appearance without conspicuous heights. Its extent is about 25 nautical miles. Columbus made it 'quite 20 *leguas*.' These were, of course, 'shore' *leguas*, and equal to 'quite 32 nautical miles.' Again an overestimation. I assume that in the morning of 17 October Columbus anchored somewhere on the narrow coastal bank in the vicinity of the present Burnt Ground.[44] This agrees with the westerly course from Rum Cay. At noon, having the wind between SW and S, Columbus weighed and stood north-northwestward. When he was still two ('shore') *leguas* from the end of the island, Cape St. Maria, he found his 'very marvellous port,' identifiable as the inlet two nautical miles southeastward of the cape.

British Admiralty chart 2075 shows this inlet clearly. But the actual situation appears to be rather different from the one shown. Professor Morison kindly let me have a sketch which he had received from Mr. Henry Howard, Newport, Rhode Island. This sketch was made by Mr. G. E. Johnson of the Crown Lands Office in Nassau, who explored in the neighborhood. It shows that the inlet has a second entrance close southeastward from Cape St. Maria lighthouse. In chart 2075 this second entrance is absent. Between the two entrances lies Newtor Cay. South of Newtor Cay, and connected with the island's mainland by a sandy ridge, lies Hog Cay. Between Newtor Cay and a tongue of land extending north from Hog Cay lie two islets. The three channels into the six-feet-deep inlet are all rather narrow. But the *Journal* does not speak of two islets in the mouth of the port. It speaks of a single *isleo* only. I cannot accept that Columbus's observation was wrong. Therefore I am inclined to believe that in 1492 the two islets were one, or that the southernmost island was still part of the spit extending from Hog Cay. Judging from photographs taken by Mr. Howard, both islets and spit are of a dune-like formation. So the change may well have been brought about by erosion. In any case, Columbus called the single islet in the inlet's mouth an *isleo*, which is in

[44] '... therefore I kept hove to all this night until daylight when I came to a village, where I anchored.' *Journal* for 16 October. The entry actually refers to 17 October.

accord with the definition given by Captain Guillen Tato. If of sufficient depth, the port could have held certainly a hundred ships. The *Journal*'s two ('shore') *leguas* are equal to about three nautical miles. Actually the distance at issue is about two nautical miles. So once again we meet with an overestimation. Columbus seems to have had a habit of making them.

Columbus went on northwestward to Cape St. Maria until he had seen the westward trending coast beyond the cape. It will have been late afternoon by then. The wind died down for a spell and began to blow from the WNW, forcing him to turn about. It is evident that Columbus did not like the look of the weather, and prudently steered away from the land during the night, averaging ESE. The *Journal* says that there was but little wind, and that this prevented him from going to land to anchor, but it does not specify where. The entry is rather mysterious, since Columbus would hardly have cared to seek an anchorage at night. It rained heavily from after midnight until near daybreak on 18 October, but the weather remained cloudy and looked like more rain. Columbus then found himself 'at the end of the island to the south-east,' where he hoped to anchor until it cleared. 'The island to the south-east' I take to have been Rum Cay. This assumption means that the 21 nautical miles from Cape St. Maria to the southwestern point of Rum Cay were negotiated in, say, about 13½ hours, which allows the ships an average speed of 1.5 knots. This speed is in accord with the *Journal*'s 'little wind.'

It may have been Columbus's intention to proceed to the same anchorage where he had spent the night from 15 October to 16 October. But the *Journal* does not say that the intention to anchor was carried out. When day had come the wind appears to have shifted northward, and Columbus followed it and went on around 'the island'—apparently Island III this time—as far as he could. He finally anchored when he could go on no more. He may have done so on the coastal bank south of Great Harbour, quite possibly off the village of Roses as Morison suggested.[45] At daybreak the following morning Columbus weighed and set off to find *Saometo*, Island IV. I will discuss his *Cabo Verde* later.

I wish to stress one point. Columbus did not refer to Long Island when he observed that at a distance of two lombard shots from 'all these islands' no sounding could be obtained. He made this observation on 15 October, before Long Island had been visited.

The Links share the opinion that Island III was Long Island, but made Columbus reach it from Samana Cay. I have already explained why I cannot accept their arguments on the latter point. I will now answer the final three of their objections.

[45] Op. cit., I, 324.

9. Although it does not appear on the charts, we found Columbus's 'maravilloso puerto,' according to Morison, a few miles north of Burnt Ground on the northern part of Long Island, a shallow indentation separated from the sea by two narrow mouths and a rocky islet between them. It had no depth whatsoever, and neither entrance was deep enough to permit access by the ships' boats. It was far too small to hold a hundred ships. We hold with Lieutenant Murdock (who otherwise selected the same route for Columbus as Morison) that Clarencetown harbor farther down the eastern shore answered the description more aptly.

I cannot account for the difference between the description of the 'maravilloso puerto' given by the Links and the sketch and photos kindly mailed me by Professor Morison. A copy of the sketch is still in my possession. The photos I returned, but I remember them distinctly. I am of the opinion that both sketch and photos show an inlet with a water surface amply sufficient for a hundred ships of the time. The westerly course on which Columbus apparently crossed from Rum Cay is incompatible with a visit to the much too southerly situated Clarencetown Harbour. But a landfall a little to the south of this harbor fits in quite well with the westerly course the Links mistakenly believe Columbus to have steered from Samana Cay.

10. The coast does not run east and west at the northern tip of Long Island, but after rounding the point it immediately falls off to the southwest. Thus it would be impossible for Columbus to have 'discovered all the part of the island as far as the coast which runs east-westerly.'

After rounding the northern tip of Long Island (Cape St. Maria) the coast does indeed immediately fall off to the southwest. But it does so for about a nautical mile only, and then runs on for about another nautical mile in the direction of *west* before turning south. I admit that the north coast of Long Island does not run east and west in a literal sense, but consider that it may be said to do so in a general sense. Presumably Columbus meant to say that at the northern tip of Island III (*Fernandina*) the previously SSE-NNW trending coast made a sharp turn to the westward.

11. Furthermore, with rain and failing winds, it is doubtful if Columbus could have covered the distance from the northwesternmost point of Long Island to the southern end from dusk of one night to dawn the next day, a distance of approximately 70 miles.

There is no question of a distance of approximately 70 miles I have stated my belief that during the night from 17 October to 18 October Columbus covered no more than the about 21 nautical miles from Cape St. Maria to the southwestern point of Rum Cay. The distance from the latter point to the proposed anchorage off Roses village is about 42 nauti-

cal miles. If these were covered in the, say, 11 hours between dawn and dusk of 18 October, the ships would have averaged a quite possible 3.8 knots.

From Long Island on the Links agree with the view that Columbus pursued his voyage by proceeding to the Crooked Island group and thence via the Ragged Islands to Cuba.

Island IV—Crooked Island group

Island IV (*Saometo* or *Isabela*) lay south of east from Columbus's last anchorage off Island III. In the *Journal* for 19 October Columbus wrote:

> At dawn I weighed anchors and sent the caravel *Pinta* to the east and southeast and the caravel *Nina* to the south-southeast, and I in the ship went to the southeast ... before we had been under way three hours we saw an island to the east ... we arrived at it ... before noon at the northern end, where there is an *isleo* with a rocky reef beyond it to the north, and with another between it and the large island, which these men from *San Salvador*, whom I carry, called *Saometo*, and which I named *la Isabela* ... the said *isleo* was bearing with the island *Fernandina*, whence I had sailed, east and west,

The now following passage is demonstrably in error. It runs:

> and from the *isleo* the coast extended to the west (*al Oueste*) for 12 *leguas* to a cape, which I named *Cabo Hermoso*, which lies on the side of the west.

It should run:

> and from the *isleo* the coast extended to the south-southwest (*al Sursudueste*) for 12 *leguas* to a cape, which I named *Cabo Hermoso*, which lies on the side of the west.

I shall return to the point later. *Cabo Hermoso* means 'Cape Fair.' Columbus went on:

> And it is indeed fair, round and very deep, without offlying shoals, and at the edge it is rocky and low, and farther in it is sandy beach as almost the whole of that coast is, and here I anchored this evening, Friday, until morning. All this coast, and the part of the island which I saw, is almost wholly beach ... this land is higher than the other islands found, and in it is a hillock (*algun altillo*), which cannot be called a mountain, but is a thing that beautifies the rest, and there seem to be many bodies of water in the center of the island. From here to the north-east is a large bight (*angla*). ... I wanted to go and anchor in it in order to land ... but the water was shallow and I could not anchor except far from land, and the wind was very suitable to reach this cape, where I am at anchor now, and which I named *Cabo Fermoso* ... and so I did not anchor in that bight (*angla*). ... In the morning, before I leave from here, I will go ashore to see what there is here at this cape. It is not the village lying farther inland where these men whom I have with me say that the King lives ... and in the morning (forenoon) I wish to go on until I find the village,

THE AMERICAN NEPTUNE

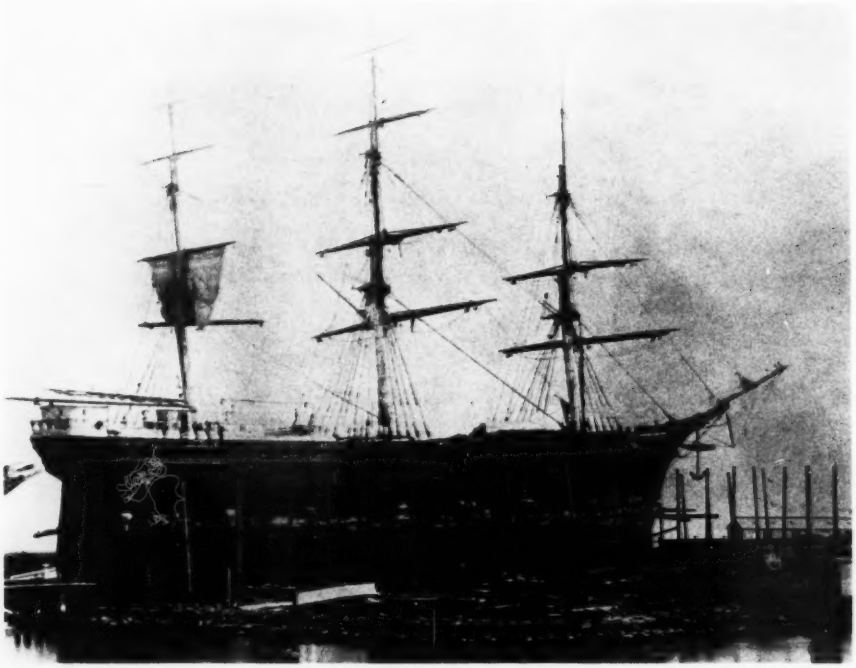
Pictorial Supplement

Photographs

PHOTOGRAPHY was in its infancy when the clippers were first built. Consequently but few really good photographs of them are known to exist. This series, all from the collections at the Peabody Museum of Salem, is remarkable in many ways, almost a history of photography from daguerreotypes of 1850 to action pictures of 1910, as well as a history of rigging and construction practices during the period. All historical data have been taken from Howe and Matthews *American Clipper Ships* and the *New York Maritime Register*, 1858 edition.

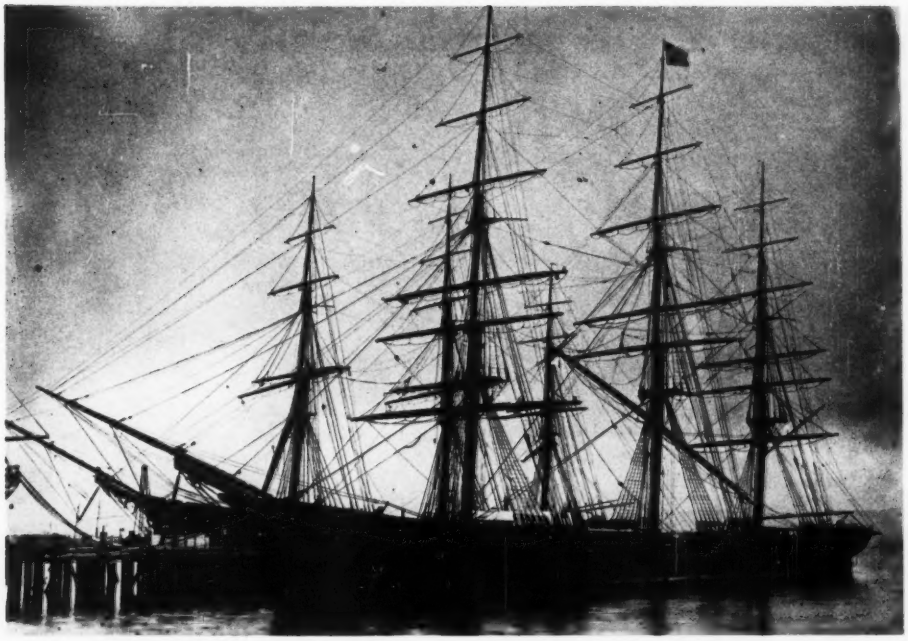
Great Republic contemporarily classed as a ship, built East Boston 1853 by Donald McKay, tonnage 4555, burned New York 1853, rebuilt by Sneeden and Whitlock, Greenpoint, Long Island 1855. This photo was taken at San Francisco in 1860.

PLATE IX



Abbott Lawrence medium clipper was built by Donald McKay at East Boston in 1856 for George B. Upton of Boston 1497 tons.

Donald McKay's shipyard in East Boston. Daguerreotype by Southworth and Hawes 1855. The vessel under construction has not been identified. *Courtesy of Richard Parker, Esq.*



Young America the last full clipper was built by William H. Webb of New York. Launched in 1853 she measured 1896 tons. Record passage 99 days Liverpool to San Francisco 1872-1873. Sold Austrian 1883 becoming *Miroslav*. Lost at sea 1886.

Black Hawk, medium clipper built by William H. Webb, New York 1856, 1059 tons. Sold German in 1880. Unreported after 1888.

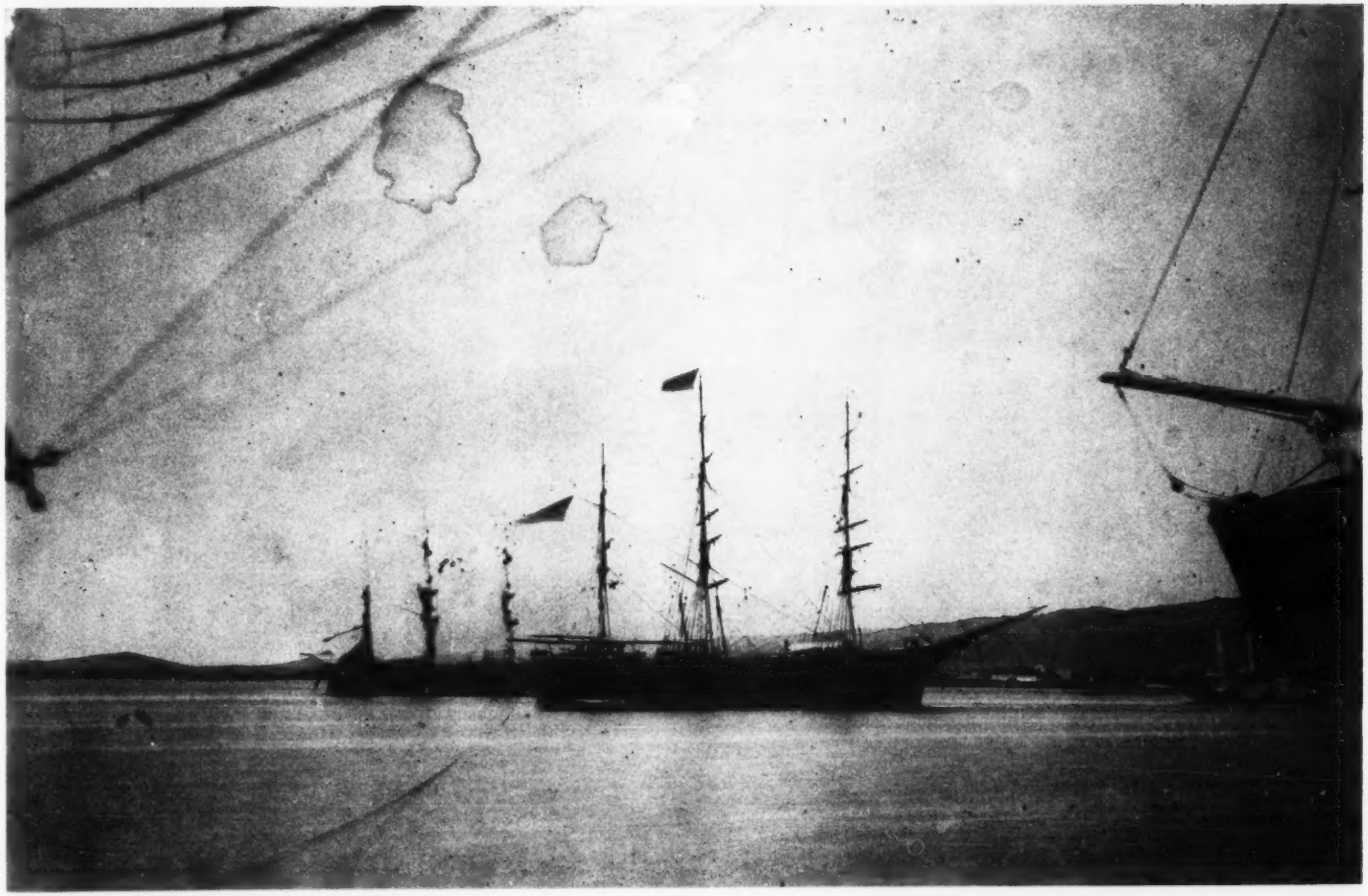
PLATE XII

Dashing Wave, medium clipper by Fernald and Pettigrew, Portsmouth, N. H., 1853. Stranded and abandoned in Seymour Narrows in 1920 while under tow. Photo in San Francisco Bay about 1890.

Champion of the Seas built by Donald McKay in 1854 at Boston. Sold English about 1857. Daguerreotype by Southworth and Hawes, Boston. Abandoned off Cape Horn 1876. *Courtesy of Richard Parker, Esq.*

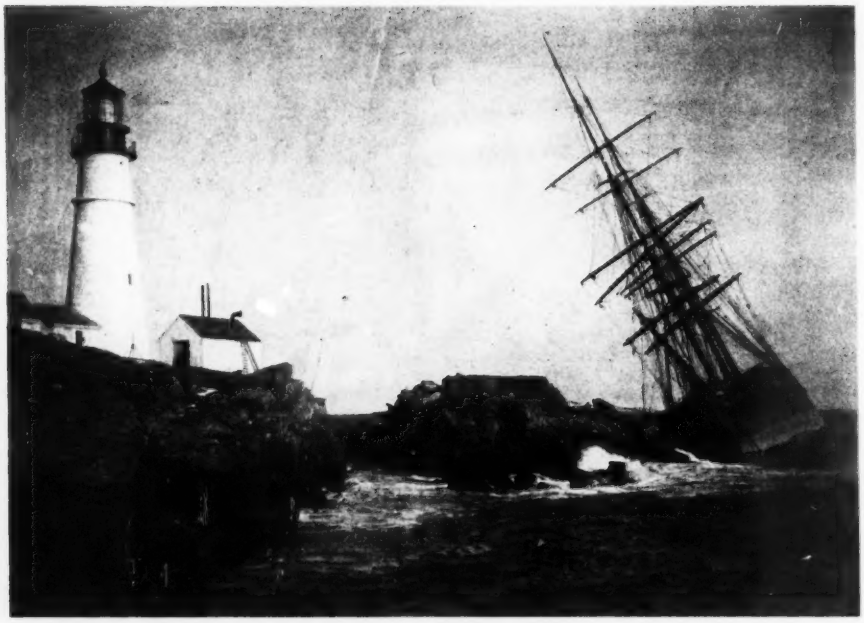
1890.

Richard Parker, Esq.

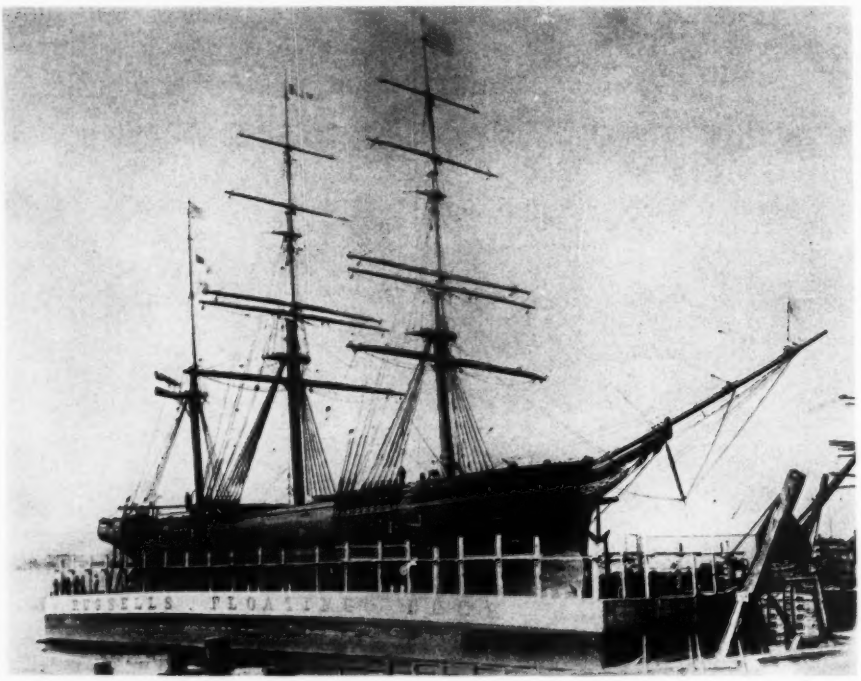


Syren, medium clipper built by John Taylor of Medford, Mass. in 1851. Sold Argentinian and still in service in 1920, the last of the clippers under sail. Photo in 1865 in Honolulu Harbor. Bark *Arctic* in background.

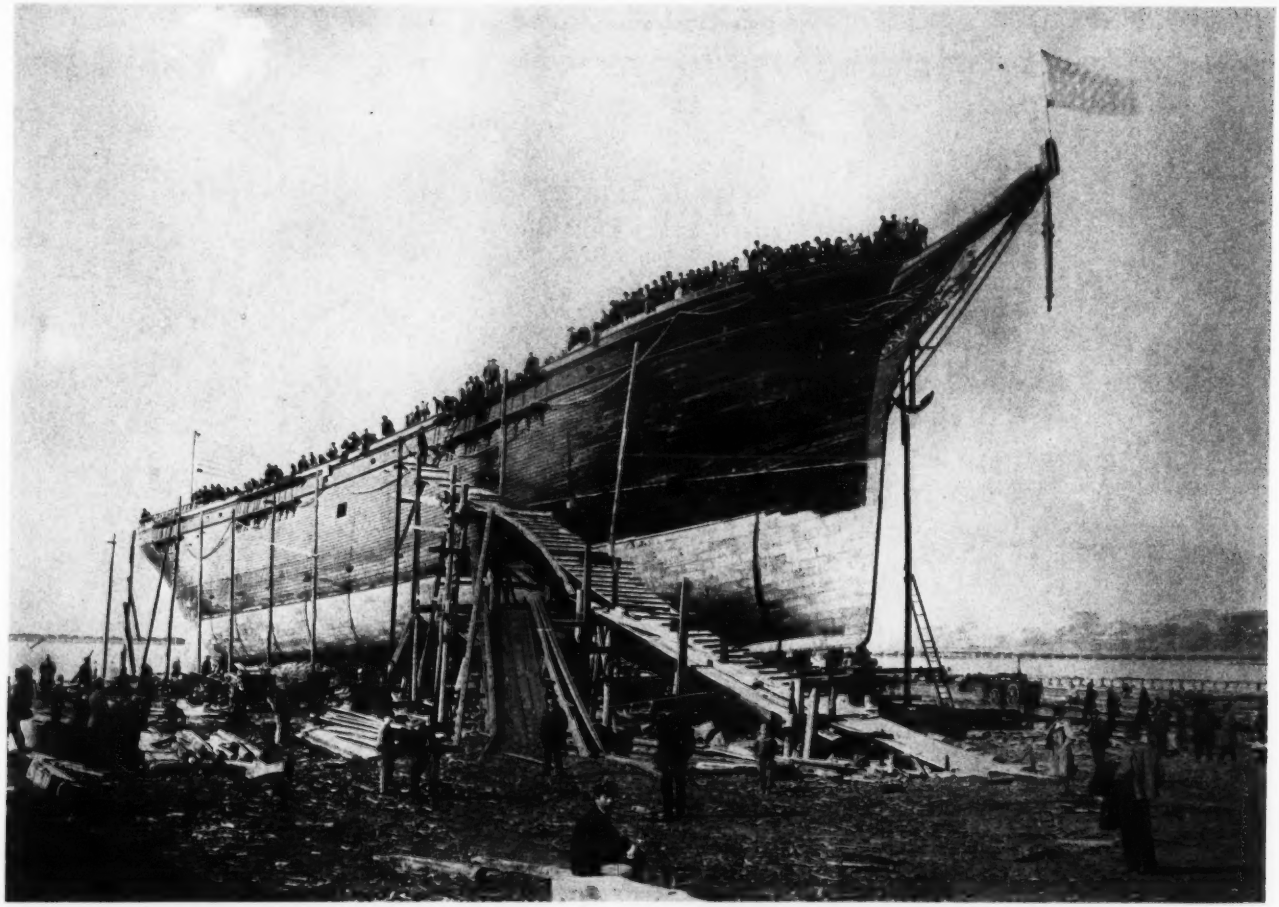
PLATE XIII



Golden State, built by Jacob Westervelt at New York in 1852. Sold Argentinian in 1884 becoming bark *Anne C. Maguire*. Lost at Cape Elizabeth, Maine 1886.



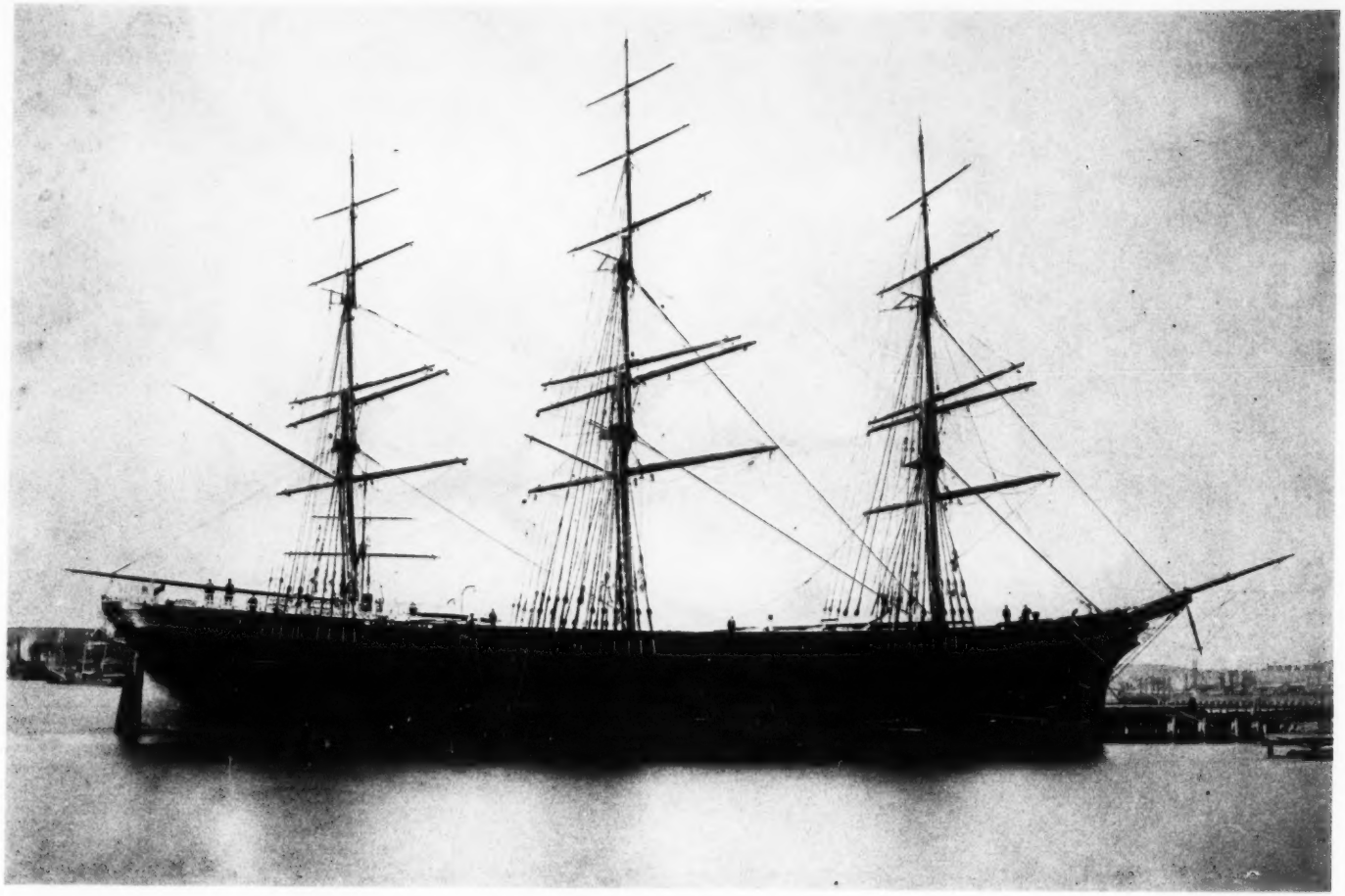
In floating dry dock at Quebec about 1884. Flying house flag of D. and J. Maguire.



Glory of the Seas, medium clipper, the last ship built by Donald McKay, East Boston, 1869. Last under sail in 1908. Burned May 1923 as a hulk, after use as a floating fish cannery. Photo by J. W. Black on launching day, October 1869. Donald McKay in high hat, back to camera.

PLATE XV

PLATE XVI



Glory of the Seas at fitting-out dock.

and see or talk with this King. ... I believe that what I call *Cabo Formoso* is an island separate from *Saometo,* and that there is another, small island in between. ...

The extract for the following day shows that there must be a hiatus somewhere. Columbus has been left at anchor off *Cabo Hermoso,* yet we are wanted to believe that the next morning at sunrise he sailed from a *Cabo de la Laguna* at the SW end of *Saometo,* which island Columbus thought separate from that on which was situated *Cabo Hermoso.* The *Journal* for 20 October runs:

Today at sunrise I weighed anchors from where I in the ship lay at anchor at this island *Saometo* off the southwest end, to which I gave the name *Cabo de la Laguna,* and to the island *la Isabela,* in order to sail to the northeast and to the east for the south-east and south side, where the village and its king were, as I understood from these men whom I have with me. I found the water so shallow everywhere that I could not find an entrance channel, and I saw that following the route to the south-west would be going very much roundabout, and therefore decided to go back by the way I had come, from the north-northeast, on the western side, and go around this island in order to (here follows a blank) I had the wind come in so close that I could by no means approach the coast until night came. ... I arranged to remain hove to under small sail all Sunday (*sic*) night. The caravels anchored because they closed the land earlier. ...

It looks as if the *Journal*'s copyist skipped a part between the opening words 'Today at sunrise I weighed anchors' and 'from where I in the ship lay at anchor in this island *Saometo* off the southwest end, to which I gave the name *Cabo de la Laguna.*' Otherwise the *Journal* does not make sense. I assume that actually Columbus sailed from *Cabo Hermoso* at daybreak, and a few hours later anchored again off *Cabo de la Laguna.* This is the copyist's second omission. I will now revert to his first. In the *Journal* for 20 October Columbus said clearly that he had come along the western side of the island or islands from the NNE. Therefore the coast must have trended SSW from the *isleo,* instead of W as said in the *Journal* for 19 October. It follows that the copyist must have omitted the first two syllables of *Sursudueste* and written *Oueste.* Gould appears to have been of the same opinion. He wrote that from the rocky islet (*isleo*) the coast ran SSW to a prominent cape. He added in a note that this bearing was partly inferred. He said that at another place in the *Journal* the bearing was given as West 35 miles (his equivalent for West 12 *leguas*), and concluded that this would have placed the cape in sight of Island III.[46] The conclusion defeats itself.

The *Journal* for 21 October finally adds:

[46] *The Geographical Journal* (1927), I, 414.

At ten o'clock I arrived here at this *Cabo del Isleo* and anchored, and the caravels did likewise. . . . Here are some very large lagoons. . . .

All the particulars given fit Crooked and Fortune Islands like a glove. The *isleo* was Bird Rock off Crooked Island. Bird Rock lies *on* the reef which fringes the northern side of Crooked Island, and from it another reef extends nearly one nautical mile to the NNW. Bird Rock also lies about due east from South Point in Long Island or *Fernandina*. From Bird Rock, as the crow flies, the western coasts of Crooked and Fortune Islands extend for 17 nautical miles to the southern point of the latter, otherwise Columbus's *Cabo Hermoso*. Columbus made the distance 12 ('shore') *leguas* or 19 nautical miles, so this time he was closer to the mark. The coasts' general direction is slightly west of south. Morison described the southern end of Fortune Island as 'Low cliffs of dark, weathered Aeolian limestone . . . interspersed with a few sand beaches.'[47] The hillock (*algun altillo*) which Columbus saw was Fortune Hill on Fortune Island, a good landmark attaining an elevation of 110 feet. The NW part of Crooked Island, the part Columbus must have sighted first, is indeed higher than the three previously discovered islands. The Blue Hills, between five and eight nautical miles to the SE of Bird Point, rise to an elevation of 200 feet. To the NE of the southern end of Fortune Island lies the large and shallow Acklins Bight.[48] Under the lee of Fortune Island, with the latter's SW extremity bearing about NNW, is an anchorage with excellent holding ground. Except for this anchorage, the edge of the Acklins Bight bank is fringed with dangerous reefs for about six nautical miles to the ESE of Columbus's *Cabo Hermoso*. Small wonder that the Admiral thought the bight inaccessible. Fortune Island is separated from Crooked Island by a shallow opening about one nautical mile wide. In this opening, through which the waters of Acklins Bight are visible, lie one large and two smaller islets. The large islet only will be noticeable to ships passing a few miles off. Within the opening the coastal bank nearly dries. Near the NW point of Crooked Island, Columbus's *Cabo del Isleo*, is a very large lagoon which a tongue of land divided almost in two. The Links observed from the air a long L-shaped lagoon just inside the point. An air photo of this lagoon, which does not appear in present-day charts, is included in their publication.

[47] Op. cit., I, 325.

[48] I have given *angla* the contemporary meaning of 'bight.' This is in accordance with Oviedo, who wrote in his *Historia General y Natural* (Lib. XXI, cap. III): 'Desde la punta ó promontorio de Sanct Miguel hasta el angla de Sanct Lúcas se corre la costa abaxo çinqüenta é çinco leguas, poco mas ó menos; la boca de la qual angla está en tres grados.' Dr. Armando Álvarez Pedroso, whose translation of the *Journal* was used by the Links, renders *angla* as 'neck of land.' Which leads to the absurdity that Columbus is said not to have anchored on 'that neck of land.'

Let us now check up on Columbus's movements. He sailed from Long Island on 19 October at daybreak, say at 6:30 A.M. He arrived near Bird Rock before noon, say at 11:30 A.M. If the Long Island anchorage was off the village of Roses, he will have had about five hours to make good a distance of at most 35 nautical miles. This means a good but not unreasonable average speed of about seven knots. From the vicinity of Bird Rock he may have sailed more or less directly to *Cabo Hermoso* at the southern end of Fortune Island, which will have allowed him only a distant view of the opening between Crooked and Fortune Islands. After an abortive attempt to enter Acklins Bight, he anchored off *Cabo Hermoso* for the night.

On 20 October Columbus weighed again at daybreak. I assume that he then sailed to the southern end of Crooked Island, which he named *Cabo de la Laguna*, and anchored once more. Close to Crooked Island's southern end is a long and narrow lagoon for which the point may have been named. I assume further that Columbus wanted to enter Acklins Bight past *Cabo de la Laguna*, with the intention to explore the south coast of Crooked Island, where he had been led to believe was the village of the island's 'king.' Apparently he entertained the wrong idea that from *Cabo de la Laguna* the south coast of Crooked Island ran northeast for a time before turning east, but anyhow he failed to find a sufficiently deep entrance channel. Whereupon he will have sailed northward, remained hove to during the night, and made an anchorage near Bird Rock at ten o'clock in the morning of 21 October.

In this way, provided my two assumptions are accepted, both Columbus's description and movements are fully accounted for.

Verhoog proposes another solution. He maintains that Island IV was Great Inagua, and that the *isleo*, which he places at the *NE* end of Island IV, was Little Inagua.

But this solution does not allow for all the details. Little Inagua has no reef extending north of it. The channel between it and Great Inagua is deep and clear, without obstructing reefs. Little Inagua is not an *isleo*, it is a full-blown *isla*. Besides, the *Journal* does not say that the *isleo* lay at the larger island's *NE* point. It says that it lay 'á la punta del Norte.' As regards Great Inagua itself, Island IV is said to have been higher than the islands discovered before. Yet Great Inagua's highest point, the 132-feet East Hill, is considerably lower than the 270-feet Flamingo Hill on East Caicos, Verhoog's Island I, and the 200-feet hill on Acklins Island, Verhoog's Island III.[49] From North-east Point, the supposed *Cabo del*

[49] The first part of this objection also affects the Links' solution.

Isleo, to North-west Point, the supposed *Cabo Hermoso*, the shortest navigable distance is 40 nautical miles, twice as much as Columbus's estimate of 12 ('shore') *leguas* or about 19 nautical miles. This apart from the debatable coastal trend. In addition, the coast between the points mentioned has no feature resembling an opening between two islands.

Then there is an unanswerable argument. It took Columbus five hours to cross from Island III to Island IV. The distance from Verhoog's Island III, Acklins Island, to his Island IV, Great Inagua, is nowhere less than 72 nautical miles. But since the ships followed more than one course, the distance actually made good would have been at least 80 nautical miles. This means that the average speed would have been at least 16 knots. Even if we consider the crossing to have taken six hours, the average speed would still have been at least over 13 knots. No sailing vessel of the period was capable of such speeds.[50] On this point not only Verhoog's identification at issue, but the whole of his thesis breaks down.

Finally there is another, equally unanswerable argument. The Indian name for Island IV, Columbus's *Isabela*, was *Saometo*. Apart from *Saometo*, the Indians mentioned an island *Babeque*. And this *Babeque*, which the Admiral never visited, proves to be no other than Great Inagua, Verhoog's choice for island IV.

When on 12 November Columbus left *Rio de Mares* in order to sail to *Babeque*, the Indians declared the island to lie to the E by S. In this instance it does not matter whether one identifies *Rio de Mares* as Puerto Gibara or as Bahía Nuevitas. From both ports an E by S course leads to Great Inagua and to no other island. At sunset, 19 November, when *Puerto del Principe* (Puerto Tanamo) bore SSW distant seven ('sea') *leguas*, it was thought that *Babeque* was visible in the east. Again the direction indicates Great Inagua. At 10:00 A.M. of 20 November, when in a position NE by N 18 ('sea') *leguas* from the one at the previous sunset, Columbus judged *Babeque* to bear ESE. For the third time the direction indicates Great Inagua. And finally, on 5 December, when at the eastern end of Cuba, the Indians said that *Babeque* lay to the NE. For the fourth time the direction indicates Great Inagua. These four bearings, all approximately correct, settle the identity of *Babeque* beyond the shadow of a doubt.

Verhoog tries to buttress his choice by writing: 'Columbus stated that Isabela Island was about 30 nautical miles from San Salvador,' and: 'As for the distance between Great Inagua (Isabela Island) and Caicos (San Salvador) the distance stated by Columbus, about 30 nautical miles, is

[50] Cf. Morison, op. cit., I. xlii-xliii.

quite correct and by no means "corrupt."'[51] The 'about 30 nautical miles' are, of course, Verhoog's evaluation of the '8 *leguas*' of which the *Journal* actually speaks. But in spite of Verhoog's statement, the distance of eight *leguas* is *not* correct and does appear to be a corruption.

I will prove my point by following an argument already presented by Morison.[52] At 10:00 A.M. of 20 November, after the ships had sailed NNE seven *leguas* and NE by N 18 *leguas* from Puerto Tanamo, their approximate dead reckoning position was lat. 21° 51′ N, long. 74° 36′ W.[53] At that hour the wind came from the direction of *Babeque*, that is, from the ESE. Columbus still wanted to go to *Babeque*, but had the wind, which did not change, dead against him. He had two alternatives then, and the *Journal* expresses them clearly. He could return to Puerto Tanamo, which he eventually did; or he could go on and anchor that same day at *Isabela*, which he estimated 12 *leguas* distant. This means that, if he had chosen to do so, the ESE wind would have carried him to *Isabela*. Well, Puerto Tanamo was in the SW by S (approximately), so *Isabela* must have been in an opposite direction. Actually *Cabo Hermoso*, at the southern end of Fortune Island, which in this case Columbus may well have considered part of *Isabela*, then bore N 17° E, distant 44 nautical miles or about 14 'sea' *leguas*. So Columbus's dead reckoning over a period of 27½ days (he had left *Isabela* at midnight of 23 October) was only two *leguas* out. As Morison remarked: 'Few modern navigators by dead-reckoning could hope to do better than that.'

I cannot accept that a navigator whose dead reckoning proves so accurate, even though he was apt to overestimate alongshore distances, should have underestimated the distance *Isabela-Guanahani*, which the *Journal* gives as eight *leguas*, by more than half. For the actual distance is about 67 nautical miles, or 21 'sea' *leguas*. I contend that it looks as if the *Journal* does contain an error. Probably the copyist wrote eight *leguas* instead of 18 *leguas*, which would have been much closer to the mark.

Many of my objections to Verhoog's identification are shared by the Links, who in addition mention a number of others.[54] I will cite one of them. 'Also we found that Northeast Cape (Verhoog's Cape del Isleo) would have provided no good anchorage, for on the seaward side it was bordered with reefs and beset by heavy seas, while on the inward side there was very deep water right up to the shoreline. The southern shore

[51] *United States Naval Institute Proceedings*, 1109.

[52] Op. cit., I, 346-347.

[53] Professor Morison's dead reckoning is slightly different (op. cit., I, 347). But the difference does not affect the issue.

[54] Op. cit., pp. 21-26.

of Little Inagua was completely exposed to the heavy seas of the open ocean. There was no place for Columbus's ships to have spent the four days preceding their departure for Cuba.'

In conclusion I wish to say that provisos 3, 4, 5, and 6 of Verhoog's point 9 are based on incorrect interpretations of the *Journal*.[55] I have explained already that *Cabo Hermoso* was not in the NW part of the island, and it is *not* said in the *Journal* that *Cabo de la Laguna* lay SW of *Cabo Hermoso*. The rocks fouling the southern coast, of which Verhoog speaks in proviso 5, are implied to be rather close to *Cabo Hermoso*, so that Verhoog contradicts himself in this instance. I agree that the island should have several lagoons, but nowhere does the *Journal* speak of 'a few separate hills.' As to Verhoog's point 10, I am afraid that I do not understand its purport.

We are approaching the end of our voyage. At midnight of 23-24 October Columbus sailed for Cuba from *Cabo del Isleo*, the point opposite Bird Rock. He sailed WSW until sunrise, when the wind failed him. The wind revived faintly at noon, and Columbus set every sail and continued on his course until sunset, when *Cabo Verde*, the SW extremity of *Fernandina* or Long Island, bore NW distant seven *leguas*.

Morison himself observed that *Cabo Verde* is visible 14 nautical miles at most.[56] I suggest, however, that Columbus was somewhat farther off than that, and that what he called *Cabo Verde* was not the present South Point, but the slightly higher land south of Mortimers village. The unpredictable current of the Crooked Island passage appears to have carried him a bit southward. I confess that I fail to understand the argument of Verhoog, that if *Cabo Verde* is part of Long Island, Columbus must have been still *north* of the Crooked Island group at sunset.[57]

The identity of the subsequently discovered *Islas de Arena* (Ragged Islands) is not in doubt. For the remainder of the discoveries I concur with the views of Professor Morison.

The following evidence confirms the conclusions reached.

The first question of the *Probanzas del Almirante* in the *Pleitos de Colón* runs:

> Whether they know that the Admiral D. Cristóbal Colón, already deceased, discovered the Indies before any were discovered by another person, that in particular he discovered certain islands which are to the north (á la parte de N.) of the island

[55] *United States Naval Institute Proceedings*, op. cit.

[56] Op. cit., I, 333.

[57] Verhoog, op. cit., p. 1109.

Cuba, as are Guanahaní and many other islands thereabouts, some of which are called the Yucayos.[58]

I believe that this question was formulated in 1512. It should be noted that *Guanahaní* and the other islands are said to be to the north of Cuba, and not to the north of Hispaniola.

In connection herewith Captain Verhoog wrote me: '*All* Yucayos = Lucayos = Bahamas lie roughly to the *NE* of Cuba, and not to the N of it.' He thought 'a la parte del Norte' was nicely expressed, and concluded: 'The islands do at least not lie south of Cuba.'

I offer no comment. But Oviedo wrote:

> . . . sailing from the island *Sant Juan* otherwise *Boriquen* to the northwest 50 *leguas* are the shoals called shoals of *Babueca*; and continuing the same course from the said shoals 25 *leguas* are the islands of *Amuana*; and farther on from them is the island *Mayaguano*; and farther on from this is the island *Yabaque*; and farther on is another called *Mayaguon*; and farther another called *Manigua*; and in front (*delante*) are the islands of *Guanahani*.[59]

I shall attempt no identifications. But it is evident that Oviedo placed *Guanahaní* among the western and *not* among the eastern Bahamas. Herrera, in his account of Ponce de Leon's first voyage to Florida in 1512, did likewise. A final proof is that the famous Juan de la Cosa map also places '*guanahani*' among the western Bahamas, although the eastern Bahamas are clearly shown.

To resume, the thesis that Columbus's first landfall was Watlings Island, originated by the Spanish historian Muñoz in 1793, revived by Admiral Becher, R.N., in 1856, ably expanded by Admiral Murdock, U.S.N., in 1884, adopted by Sir Clements Markham and Juan Ignacio de Armas in 1892, by the Earl of Dunraven in 1906, and finally verified on the spot by Professor Morison in 1940, stands undefeated. The note against Watlings Island in two British Admiralty charts—'Landfall of Columbus Oct^{r} 1492'—may well remain where it is.[60]

[58] Navarrete, op. cit., III, 562.

[59] *Historia General y Natural de las Indias*, lib. XIX, cap. XV.

[60] I wish to express my appreciation for the ready way in which Professor Admiral Morison met my requests for information on (to me) doubtful points, and in which he offered me a few 'tips.' I also wish to thank my son, J. Foeke Roukema, for drawing the accompanying sketch.

Captain Roukema was born in 1895. *He followed from* 1911 *to* 1913 *the preliminary course at the Municipal Nautical School in Rotterdam. He went to sea in* 1913, *eventually entered the service of the Royal Dutch-Shell Group in* 1916. *He became interested in early navigation methods and the discovery of the Americas in the* 20's. *He served the Royal Dutch-Shell Group throughout the war and resigned, a Senior Master, in* 1948. *Thereafter he was with two Amsterdam shipping companies and retired permanently in* 1955. *He joined as editor-secretary the editorial board of* Imago Mundi, *a review of early cartography, in January this year, following the death of Prof. Leo Bagrow, the review's founder and editor.*

Misadventures of a Maine Slaver

BY GEORGE A. BILLIAS

MAINE was famed as a hotbed of abolitionists by the outbreak of the Civil War. Yet there is considerable evidence that many Maine men in the late eighteenth century participated in the slave trade and helped build the institution that numerous of their descendants fought to destroy a generation later. Such a man was Samuel Patterson, Maine master mariner, whose unpublished log of the schooner *Lynn* proves that this vessel once carried a cargo of 'black ivory.'[1]

Born at Pownalborough in 1767, Patterson lived to see his country win its independence, his state separated from Massachusetts, and the United States stretch to the Pacific coast. In a region noted for its longevity, he lived to the ripe old age of eighty-two and died the year many of his neighbors fled from his beloved state to seek the riches promised by the California gold strike. In the course of his extraordinarily active and adventuresome career on the sea, he engaged in the slave trade in 1795, was captured by a privateer three years later during the quasi war with France, and sailed often in that period just before the War of 1812 when paper blockades were more treacherous to American seamen than underwater reefs.

Much attention has been paid to the fortunes founded by slave-trading merchants, but less emphasis is given to the cargo carriers in the Negro traffic. *Lynn*'s log provides a vivid picture of the numerous mishaps and occupational hazards to which all slave ships were exposed. The horrors of the Negro trade were not confined to the middle passage alone, as this log shows, and many a misfortune befell the slave ships that plied between the West Indies and southern states during the nation's early years.

Typically, *Lynn*'s log opened on a religious note on 27 November 1794, and was entitled, 'A journal of an intended voyage by Gods permission

[1] Patterson was born 5 February 1767 in Pownalborough, moved to Augusta in 1809, and died there on 4 January 1849. His logbooks and papers were preserved by his son, James Howard (Patterson) whose widow, Mrs. Hannah (Neal) Howard placed them in custody of the Kennebec Historical Society, Augusta, Maine, in 1899.

from Kennebeck to the West Indies. . . .'[2] Indeed, at the outset the schooner appeared to have the blessings of the divine: a fine Dresden skipper, Convers Lilly, was named her captain; Patterson was appointed as mate; and the vessel made her first trial run down the Kennebec in early December without a hitch. But something in even this short trip made one of the hands uneasy, because Patterson reported seaman Joel Ruel missing the following day. After a frantic but fruitless search for Ruel, Captain Lilly came aboard on the morning of 14 December and by eleven o'clock the vessel was under way.[3]

On her maiden voyage, *Lynn* did not participate in the slave trade. Her cargo was one commonly carried by Maine ships when they made a direct run to the West Indies in this era—lumber, barrel staves, and shingles. Maine's rocky soil and short growing season limited her agricultural output, and she depended more upon forest and fish products for exchange in foreign trade than on farm goods.

The weather was fair and clear on the first day out, but by the evening of the fifteenth the schooner ran into the first of a number of gales that marred her initial passage. During one stretch she was forced to run seven days with reefed sails before the high winds, and heavy seas pounded the vessel so that her deck cargo shifted again and again. Captain Lilly was more fortunate than many an American skipper on this trip, however, because he succeeded in delivering his cargo intact to Bridgeton in the Barbados by mid-January. As *Lynn* lay in port, Patterson whiled away the time counting ships that had lost their deckloads in the same storms. The schooner then made an uneventful journey back to the states by way of Grand Turk island and landed at New Bern, North Carolina, in late February with a cargo of salt and rum.[4]

It was *Lynn*'s second voyage that brought her in contact with the slave trade, and the vessel seemed cursed with bad luck from the very start as mishaps multiplied thick and fast. Rather than return to his home port for a cargo, Captain Lilly decided to take on some barrel staves, bacon, and flour from New Bern for the West Indies instead. While the schooner was still in port, snow squalls and high winds blew in and drove the vessel aground temporarily. The harsh weather affected the crew as well as

[2] 'A journal of an intended voyage by Gods permission from Kennebeck to the West Indies in the Schooner *Lynn* of Kennebeck Convers Lilly Commander Kept by Samuel Patterson,' 27 November 1794-22 October 1795, in Kennebec Historical Society, Augusta, Maine; hereinafter, *Lynn* log. The author wishes to acknowledge his debt to Mr. Paul P. Graves of Augusta, Maine, for calling this log to his attention.

[3] *Lynn* log, 14 December 1794.

[4] Ibid., 27 February 1795.

the craft, and most of the hands came down with severe colds. At the same time, a rash of thefts broke out aboard ship. Patterson discovered his greatcoat missing and was upset to the point where he resorted to profanity in his log for the first time, and both he and Lilly reported money stolen.[5] The Negro hands loading cargo were suspected as the culprits, but the charge was never proved nor the missing articles recovered. When the vessel finally did get under way, she was compelled to return to the Carolina coast after several days at sea in order to lighten her excessively heavy load. The elements were even less kind to *Lynn* on this trip than they had been before, and the seas became so rough that she lost part of her deck cargo.

Adversity dogged *Lynn* even after her arrival at Kingston, Jamaica, on the first of May. She had no sooner dropped anchor than she was rammed by another ship in the harbor and suffered some damage. When it came time to unload the remaining cargo, the bacon was found to be wormy and had to be scraped before being brought to shore. Nor was this the only spoilage. Inspection of the ship's stores revealed that many of the barrels of bread for the crew had been soaked by the heavy waves that had broken over *Lynn* during the rough voyage and these rations were ruined.[6]

Such misfortunes with the cargo might have prevented a more cautious man from taking on the most perilous of all freight—Negro slaves—but Captain Lilly did not hesitate. When offered a thousand dollars to carry 'three Frenchmen and some slaves,' he snapped at the chance.[7] If he had any religious scruples about the transaction, Lilly managed to reconcile his piety and purse; like Captain Ball, the Yankee slaver in a chanty, 'He traded in niggers and loved his Saviour.'

On 12 May sixty to seventy Negroes came aboard *Lynn*.[8] No changes whatsoever were made on the schooner to accommodate her human freight, except that she took on an extra supply of water. The very day the last of the lumber was unloaded from *Lynn*'s hold, the slaves were brought aboard and marched below. The vessel was chartered for this purpose by one Mr. Burril who was taking the Negroes to Savannah, Georgia, for sale. The rest of Burril's cargo was made up of two other ingredients basic to the slave trade, sugar and rum.

Sickness came aboard *Lynn* simultaneously with slaves; members of

[5] Ibid., 8 and 20 March 1795.
[6] Ibid., 1 May 1795.
[7] Ibid., 10 May 1795.
[8] Ibid., 12 May 1795.

the crew began to come down with some form of disease. What the nature of the illness was has never been recorded, but at least three of its characteristics were noted in the log. It was fatal, contagious, and caused its victims to run a high fever. Nothing struck greater panic aboard vessels in that day than contagious diseases because isolation was next to impossible in the close quarters of such small ships. The fact that *Lynn* was carrying slaves compounded the danger because the cargo as well as the crew were potential germ carriers.

The pestilence spread while *Lynn* lay in the harbor. Hardly a vessel in port failed to lose a man, Patterson noted, and one morning he saw the body of a dead Negro drifting by the ship, presumably a casualty of the unknown disease. Members of *Lynn*'s crew were violently ill and sweat a great deal, but as yet none had died. Those who remained healthy could find little consolation in the situation, and as their spirits dropped they took to drink. Strangely enough, there was a doctor aboard *Lynn* either as a passenger or as a precaution to protect the slaves from the disease, but his presence did not raise the men's morale.

The illness continued as *Lynn* sailed over to nearby Port Royal, but here the schooner faced danger of a different sort. The crew from one of the sloops anchored close by slipped aboard *Lynn* unnoticed and made off with two slave women. Upon learning of this kidnaping, Captain Lilly immediately rowed over to reclaim his 'property.' Instead of apologizing for the conduct of his men, the sloop captain showered Lilly with abuse. *Lynn*'s captain had his revenge, however, because he reported the incident to the Port Royal authorities and had the sloop detained 'for satisfaction,' as he called it.[9]

On 30 May, *Lynn* set sail for the states in convoy with an enormous fleet of one hundred and thirty-five vessels.[10] Undoubtedly the ships sailed together for safety's sake against the risks arising from the Napoleonic wars, and for further protection the convoy was accompanied by the sloop of war, *Cormorant*. But on this voyage, the greatest perils to *Lynn* were from plague not plunder.

The dread disease raged aboard ship and spared no one. Despite medical care, Captain Lilly, mate Patterson, the crew and slaves all became ill. *Lynn* became a floating hell, and ship duties were performed by men racked with disease. Because they were confined in close quarters, the slaves suffered most and experienced the first fatalities. On 15 June one Negro died and was buried at sea, and two days later another passed away.

[9] Ibid., 29 May 1795.
[10] Ibid., 3 June 1795.

Some dozen days later, Patterson gloomily recorded the death of one of the crew as follows:

> Between 3 and 4 AM John Cleamons departed his life after being sick a little better than four days he was out of his head most of all night [and] at 5 we have him overboard.[11]

As if Captain Lilly did not have troubles enough, Mr. Burril proved to be a most cantankerous passenger. On one occasion when some members of the crew accidentally bumped into him, Burril took offense and drew a pistol on them. In order to make amends for this episode, Lilly and Patterson were forced to give up their cabin quarters to Burril and to sleep in the storage. Later, the ship's boy found one of his plates in Burril's possession. When the lad attempted to recover the damning evidence, Burril promptly heaved the plate overboard. Burril had still another run-in with one of the hands and ended up by smashing the seaman with a chair. When the crew member started to defend himself, Burril whipped out his pistol once again. An ill wind seldom blows no good, however, and the sickness eventually affected Burril and laid him low. 'Thank [G]od,' remarked Patterson in his log, 'we will have some peace now.'[12]

In spite of the precautions taken to send *Lynn* in convoy, the schooner lost sight of the fleet in mid-passage and completed her voyage in solitary splendor. Exactly one month after her departure from Jamaica, she dropped anchor off the coast near Savannah, Georgia. With her journey ended, another of *Lynn*'s difficulties began.

News of the disease aboard ship spread to the shore, and apparently some Savannah inhabitants took steps to prevent the landing of the slaves. Those who dreaded that the Negroes might bring the pestilence ashore called a series of protest meetings in the city.[13] The desire for profits proved greater than the fear of plague, however. Despite scattered opposition, Captain Lilly finally was permitted to bring the slaves into Savannah, though not before one more Negro died from the ravages of the disease.

Patterson was destined to have many other adventures at sea, but as far as is known he never again served on a slaver. In 1798 he sailed as master of the brig *Jane* out of Wiscasset, and on the way from Liverpool, England, his vessel was taken by the French privateer, *Frepnone*.[14] *Jane* was

[11] Ibid., 29 June 1795.
[12] Ibid., 24 June 1795.
[13] Ibid., 10 July 1795.
[14] Fannie S. Chase, *Wiscasset in Pownalborough* (Wiscasset, 1941), p. 305.

taken to Santander where she was condemned and sold, and Patterson made his way back to the United States. A number of years later at the outbreak of the War of 1812, the ship *Ganges* on which Patterson was master was seized by the British and he was thrown into a prison ship.[15] But in spite of these later misfortunes, at the end of his career Patterson probably would have agreed still with the entry he made at the conclusion of *Lynn*'s voyage, '. . . of all the passages I ever maid I never experienced one so tideous and dissagreeable as this from Jamaica. . . .'[16]

[15] Patterson's capture can be deduced from the entries in the ships' logs of *Asia* and *Ganges*, and entry for October 1812 in Patterson's Account Book 5 September 1811 to 13 November 1812 in Patterson Papers, Kennebec Historical Society, Augusta, Maine.

[16] *Lynn* log, 1 July 1795.

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The Longwood Library announces its sponsorship of a proposed edition of selected correspondence of Rear-Admiral Samuel Francis du Pont for the years 1861-1865, prepared by Rear-Admiral John D. Hayes, U.S.N. (Ret.), 1970 Fairfax Road, Annapolis, Maryland. Admiral Du Pont commanded the South Atlantic Blockading Squadron, and led the memorable naval attack against Charleston in 1863. Though the bulk of his letters is included in the large collection of Du Pont family papers now at Longwood, Admiral Hayes and the Director of the Longwood Library would welcome communications from anyone having knowledge of materials which exist elsewhere, and particularly letters from Du Pont to his fellow officers. Communications should be addressed to Charles W. David, Director, Longwood Library, Kennett Square, Pennsylvania.

Schooner William Jewell, *1853-1947*

BY PHILIP P. CHASE

THE 14 July 1945 found me in North Haven village in search of transportation for a Hodgson portable house from its then site on the Lockwood place on Vinal Haven side of the Thoroughfare to Horseshoe Cove on Eggemoggin Reach some twenty miles up East Penobscot Bay.

Mr. C. E. Waterman of North Haven suggested that the decrepit old coasting schooner then discharging coal from Belfast at his wharf might be available to take the sections of the house and all the furniture and plumbing fixtures laid flat on deck between the masts.

By dickering with the skipper, Elmer M. Greenlaw, I concluded an agreement with him to deliver my cargo 'on Board' his schooner off my beach in Horseshoe Cove when, as, and if weather permitted. The last 'if' turned out to involve serious delay as the old hooker had no power, was incapable of stemming an ebb tide in Penobscot Bay without a good fair wind. Moreover, the seventy-five-year-old skipper was alone on board; he had discharged the one deck hand who had helped him bring the coal from Belfast and expressed great doubt about securing any help unless his wife arrived from New York to ship as mate and cook.

However, zero hour for removal of the house forced me to have local carpenters take the house section by section down to the Lockwood float and load it on board the schooner which was towed across by a friendly motorboat. I set out for Horseshoe Cove in my yawl to await events, leaving everything I expected to live in that summer covered up with a big tarp on *Jewell*'s deck.

For twelve days I waited in Horseshoe Cove telephoning impatiently from time to time. Always the same answer: conditions not favorable—the rare combination of fair wind and tide, no fog and a helper just didn't happen.

Finally, at sunset on 23 July, *Jewell* hove in sight off the Cove. I rushed out under power in my yawl to pilot her in. Greenlaw sung out he was

all alone and could I put a hand on board to help him. A gentle southerly and the last of a flood tide brought her in crabwise, but because of fouled halyards and anchor cable she overshot her berth and was narrowly checked short of the rocks above my beach.

Next morning when my carpenters arrived I pushed the old schooner with the bow of my yawl into the desired position and the carpenters warped her in on the flood as close to the beach as possible. From that position they quickly lightered the house sections ashore.

It was hard to say whether *Jewell* was in worse shape above or below decks. The running rigging was badly stranded, her mainsail had been scorched through lying over the 'Charley Noble' while the galley fire was lit. The anchor chain, in the cruel words of my carpenters, resembled 'a string of rotten doughnuts.' The winch, minus its wildcat, was in such shape that the only way the anchor could be raised was by applying the jumbo halyards hooked into a link as close to the water as the old skipper could reach with his fish gaff.

Skipper Greenlaw was in no hurry to leave, so we celebrated the erection of the new house, the skipper's seventy-fifth anniversary and the ninety-second anniversary of *Jewell,* all hands—carpenters and all—crowded into his cluttered cabin.

He was ready enough to talk about his long years of coasting experience, slipping year by year from big three-masters to his present sorry command. Ownership in the vessel had become so obscure at one time, because of the ownership of shares in unsettled estates of deceased owners, that only by an admiralty sale could the title be cleared. Greenlaw thought himself a part owner, but could not explain the basis of his share of the pitiably small freights he carried. He referred to Mr. Waterman as 'managing owner.'

The next morning with my yawl I pushed him out of the Cove against the beginning of the flood which, he assured us, once out in the East Bay, would carry him up above Turtle Head, beyond that he could count on the ebb in the West Bay to take him back to Belfast or Rockland—'ef it didn't breeze up too pert from Sou'West.'

Little by little *Jewell*'s early history has come out, thanks to the courtesy of W. A. Glover of Rockland, a former part owner, who has supplied the bill of sale. Further information was furnished by Mr. Robert B. Applebee, of Stockton Springs, and by Mr. John M. Richardson, editor and publisher of the *Courier-Gazette,* of Rockland.

Built at Nyack on the Hudson in 1853, *William H. Jewell* was at first a centerboard brick-sloop—hardly more than a flat-bottomed barge. Some

time about 1865 she was brought from New York to Penobscot Bay and converted into a schooner to take advantage of the boom in the lumber trade. At that time, her skipper claims, she was lengthened by the addition of a 'Picked bow' and a shallow keel or skeg was substituted for the centerboard. She hailed from Rockland, Maine, in 1884; remained a schooner until 1919; was a gas screw 1920-1945 with 24 horsepower, became a schooner again in 1945 without power.

The *Rockland Courier-Gazette* for 5 August 1941 said, in part, under the title 'Old but Useful':

> Many of the beautiful summer estates on the islands had their building materials transported aboard the *Jewell*.
> For a number of years she was owned and operated by the W. H. Glover Lumber Co., being taken from the lumber trade and placed in general freighting between 20 and 25 years ago, and is now operated by Capt. Levi L. Mitchell, her present owner.
> Built and rebuilt countless times, patched again and again, she is still a sturdy craft and shuttles back and forth from Rockland to the bay ports, carrying a varied cargo, whatever chance may offer her, one of the last of the famous old 'coasters' once so numerous along Maine waterfronts.

Mr. Clarence Waterman, whom Skipper Greenlaw described as managing owner, wrote me recently in regard to *Jewell*'s last voyage and demise:

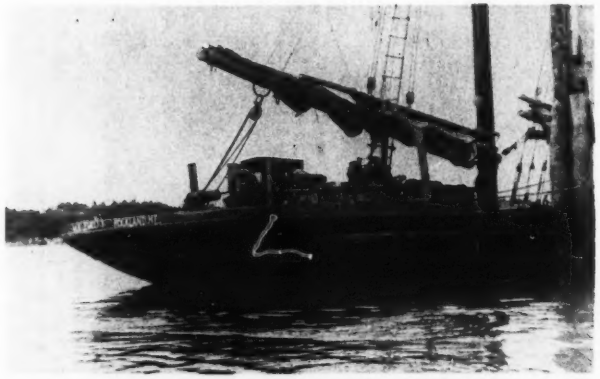
'The *William Jewell* came down from Belfast with a load of coal and lumber. She anchored in the Fox Island Thorofare. The night of ——— 1947 a gale came on and she parted her cable and went ashore on Cross Islands (near Southern Harbor). Her cargo was taken off and she was floated and towed to the "cubby Hole" at the head of Waterman's Cove, where she was beached.'

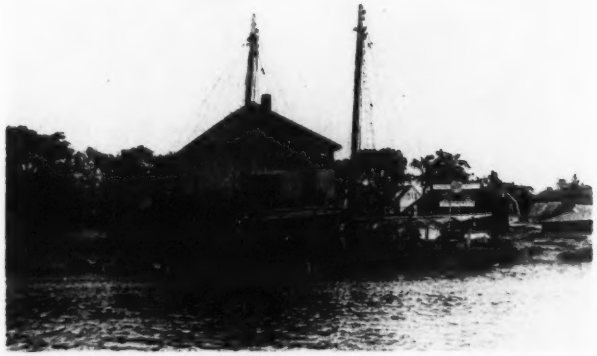
'After a year or so,' Waterman continued, 'I sold her masts for $150. We paid $400. for her and broke even on the deal.'

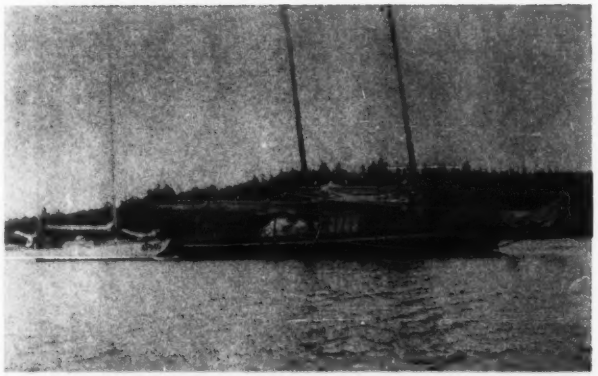
All of which business looks cryptic to me but the fact of her demise and the location of her grave is definite.

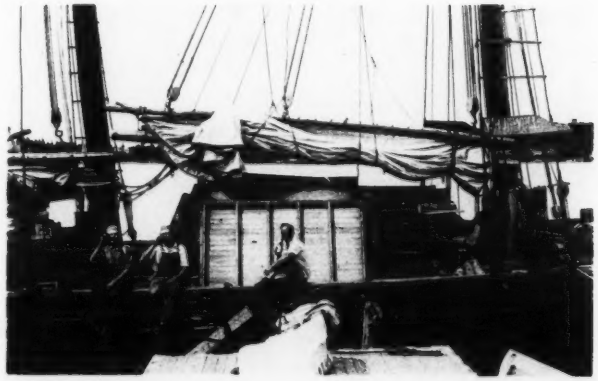
Mr. Waterman also stated that Captain Greenlaw, his wife, and two men whose names are not known, were on board the night of the wreck but all were taken off alive. What has since become of Captain Greenlaw I have been unable to discover, but he should go down in the history of Penobscot Bay as the last skipper to *'sail'* a 46-ton, 62-foot schooner *singlehanded.*

Philip P. Chase is a retired Professor of History at Harvard University. He has sailed the Maine coast for forty-seven years; since 1943 *making his headquarters in Horseshoe Cove, which he describes in this article.*

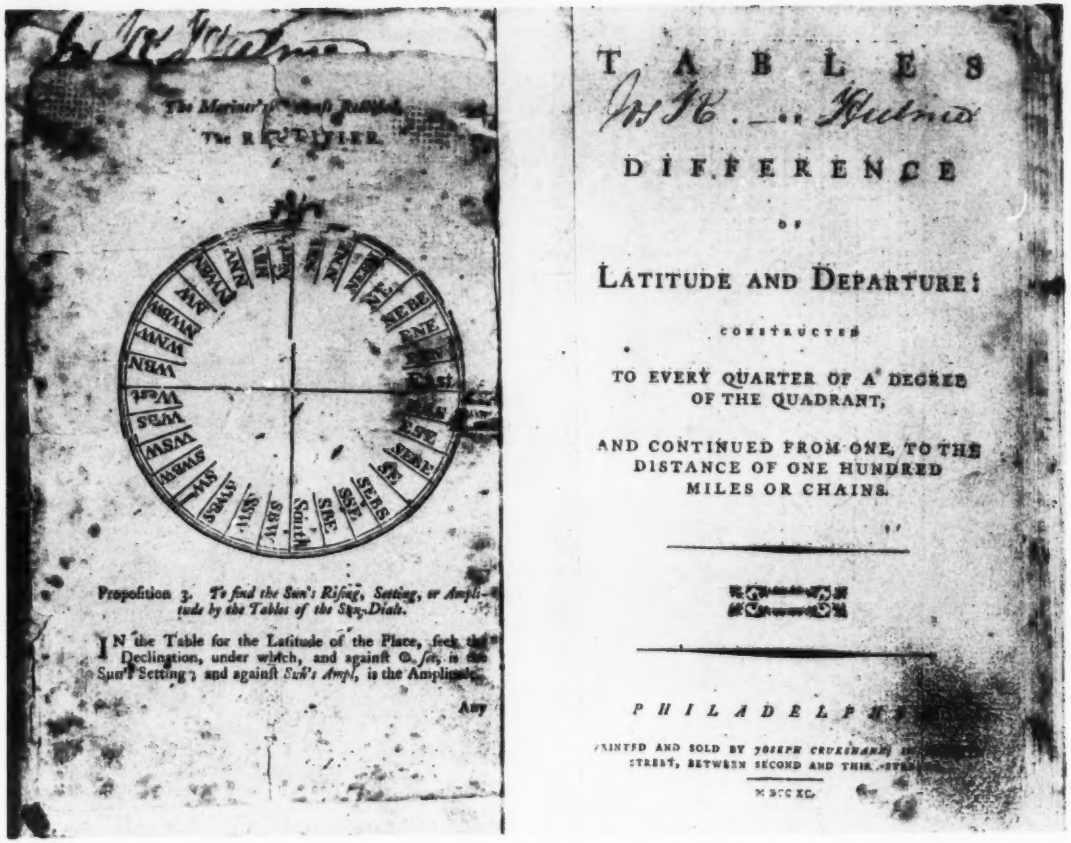








Schooner *William Jewell*. *Upper left:* Being pushed by yawl *Hostess III* to berth in Horseshoe Cove to unload. *Upper right:* Lying at Waterman's Wharf, North Haven, 16 July 1945. *Lower left:* Stern view, Waterman's Wharf, 16 July 1945. *Lower right:* Loading at float



The Library of Congress' copy of John Robertson's *Tables of Latitude and Departure* (Philadelphia, 1790) with the flyleaf rolled to show the title page and the pasted-down leaf from Andrew Wakely's *The Mariner's Compass Rectified* (London, 1766)

The Way of a Book

BY J. M. EDELSTEIN

THE way of a ship in the midst of the sea, as the Biblical proverb has it, is not the only phenomenon often 'too wonderful' to observe. The way of a book is also occasionally equally mysterious and at times equally unpredictable. When the book is about ships and their way in the sea the wonder is twofold.

A recent acquisition of the Library of Congress is a copy of John Robertson's *Tables of Difference of Latitude and Departure. Constructed to every quarter of a degree of the quadrant, and continued from one, to the distance of one hundred miles or chains* (Philadelphia: Printed and sold by Joseph Crukshank, in Market-Street. Between Second and Third-Streets, 1790). It is assumed[1] that the author is the English mathematician and student of navigation who lived from 1712 to 1776 and was, from 1768 to his death, Librarian to the Royal Society; he was the author, among other books, of *The Elements of Navigation; Containing the Theory and Practice. With the necessary Tables, and Compendiums for finding the Latitude and Longitude at Sea. To which is added, A Treatise of Marine Fortification. Composed for the Use of The Royal Mathematical School at Christ's Hospital, The Royal Academy at Portsmouth, And the Gentlemen of the Navy*, first published in London in 1754 and reprinted seven times before 1800, as well as several papers on mathematics and navigation which appear in the *Philosophical Transactions* of the Royal Society. The 1790 *Tables of Difference of Latitude and Departure*, number 22856 in Charles Evans' *American Bibliography*, is a rare book; in addition to the copy in the Library of Con-

[1] Louis C. Karpinski, *Bibliography of Mathematical Works Printed in America through 1850* (Ann Arbor: The University of Michigan Press; London: Humphrey Milford, Oxford University Press, 1940), pp. 82-83, lists this publication as an anonymous one, appearing in America first in 1785, accompanying Robert Gibson's *A Treatise of Practical Surveying, which is demonstrated from its first principles ... The fourth edition ... With alterations and amendments, adapted to the use of American Surveyors* (Philadelphia, printed and sold by Joseph Crukshank, 1785). On page 126, Karpinski lists the *Tables of Difference of Latitude and Departure* ... (Wilmington, Del., printed by Bonsal and Niles for Zachariah Jess, 1799), accompanying Zachariah Jess' *A Compendious System of Practical Surveying and Dividing of Land* ... (Wilmington, Del., printed by Bonsal and Niles—for the compiler, 1799), and here credits the *Tables* to John Robertson.

gress, only three other copies are recorded in the United States, in the New York Public Library, in the American Antiquarian Society, and in the library of American University, according to Karpinski and the National Union Catalog.

When the Library of Congress' copy of this slim volume came to my attention, I noticed pasted down on the front end paper a leaf from another book with the page numbers 95 and 96. The leaf shows, on page 95, a woodcut illustration of a compass which is designated 'The Rectifier' and across the top is the running title 'The Mariner's Compass Rectified.'

The Library of Congress has a copy of a late edition of Andrew Wakely's *The Mariner's Compass Rectified; Containing Tables, shewing the true Hour of the Day, the Sun being upon any Point of the Compass: With the true Time of the Rising and Setting of the Sun and Stars, and the Points of the Compass upon which they Rise and Set: With Tables of Amplitudes. Which Tables of Sun-Dials, Semidurnal-Arches and Amplitudes are calculated from the Equator to 60 Degrees of Latitude, either North or South. With the Description and Use of those Instruments most in Use in the Art of Navigation. Also a Table of Latitudes and Longitudes of Places. Enlarged with many useful Additions, by J. Atkinson. The Whole revised, and carefully corrected, with accurate Tables of the Sun's Declination, adjusted to the New-Stile, By William Mountaine, F. R. S.* (London: Printed for J. Mount and T. Page, on Tower-Hill, where you may have all Sorts of Sea Books, 1766); this copy of the edition of 1766, according to the National Union Catalog, seems to be the only one recorded as well as the only edition in the Library of Congress. First published in 1665, this text was one of the most popular of navigational aids and appeared in at least twenty-four editions before 1800.

It was with curiosity alone that I turned to page 94 of our copy of *The Mariner's Compass Rectified*. Curiosity soon turned to amazement when I saw a gap between pages 94 and 97; the leaf containing pages 95 and 96, on signature F_8, was missing. I feel it safe to presume that the leaf pasted down in the *Tables of Latitude and Departure* came from this very copy of *The Mariner's Compass Rectified*: the text follows in order; the catchwords are appropriate; the paper and the type are identical.

Unfortunately, we can offer little or no explanation for the mystery. *The Mariner's Compass Rectified* has been in the Library of Congress, probably, since 1867, for that is the date stamped on the title page of the book with which it is bound; perhaps no former bibliographer indicated the missing leaf because the book has never been fully cataloged. We can

ascertain nothing about the provenance of Robertson's *Tables of Latitude and Departure*; on the title page and elsewhere is the autograph of one Jos. K. Hulme, of whom nothing is known; on the front flyleaf, pencilled in a contemporary hand, is the date March 1st, 1844, and throughout are pencilled sums.

Whatever the explanation, the routes which brought these two books together must have been interesting. Even more interesting must have been their paths since. After a long time, the missing leaf has found its way back to *The Mariner's Compass Rectified*, and that was a good job of navigating.

J. M. Edelstein, a native of Baltimore and a graduate of the Johns Hopkins University, is Reference Librarian of the Rare Book Division at the Library of Congress. He has contributed to bibliographical, literary and general publications.

PRIVATE AND CONFIDENTIAL
AND ASTRONOMICAL.

Legation of the United States
Lima, Peru, March 3rd 1880.

SIR:

By the notice prefixed to the "Register of the Department of State" (corrected to December 1879) I am required to note any errors or omissions I may discover and report to the Department.

I suppose this notice may be fairly construed to include the calendar directly facing this request.

By this calendar it would seem that, in the northern hemisphere, February of this year has but 28 days, and that last Sunday was the first day of March. But all the calendars on this side of the Equator give February 1880, 29 days and make last Sunday the last day of that month.

One or the other must be in error, unless something has got loose at the Equator or that circle has got so much out of repair as to have allowed the northern hemisphere to slide forward into March one day sooner than the southern, and to complete its year one day earlier.

I knew the Poles had been worn out sometime ago, as no one has been able to find them; but I thought we had a right to place our trust in the Equator for a few years more. However nothing seems constant in nature but change.

I am, as ever, your friend and
obedient servant.
J. P. CRISTIANCY

Hon John Hay
Assistant Secretary of State
Washington, D. C.

Contributed by Captain Edgar K. Thompson, U.S.N.

Documents

First Word from *Kearsarge*

Captain John A. Winslow of U.S.S. *Kearsarge* made a terse report on 19 June 1864 to the Secretary of the Navy concerning his engagement with C.S.S. *Alabama* on that day. He followed this with several other communiqués on the battle but did not file a complete report on the action until 30 July. All of these reports can be found in Volume 3 of Series I of the *Official Records of the Union and Confederate Navies in the War of the Rebellion*.

To this day, however, a controversy rages over a number of points in the historic battle. Captain Raphael Semmes of the Confederate cruiser claimed that the Yankee sloop-of-war was really an ironclad, citing the chains hung on the sides of the vessel and 'covered over by a thin outer planking which gave no indication of the armor beneath.' Winslow believed that Semmes had crewed his ship with gunners from the Royal Navy Reserve's practice ship *Excellent*. Semmes called this poppycock, admitting only that he had had aboard a half-dozen ex Royal Navy men and that they were 'in no respect superior to the rest of the crew.'

There were other squabbles. Did *Alabama* fire into *Kearsarge* after showing a white flag? Did the Union vessel fire on its opponent after the raider's colors had been struck? And as for the English yacht *Deerhound*, was it a consort to *Alabama*? Should it not have surrendered the Confederate seamen it picked up instead of taking them to England?

Reports, articles and books have steamed forth to do battle over the claims and counterclaims and if one more document is contributed at this time it is in the sure knowledge that it will not be the last. In any case, it is interesting to see just what Winslow reported to one of the men most concerned with Confederate privateers, cruisers and blockade runners.

This correspondent was Thomas H. Dudley, United States Consul at Liverpool, who carried on a one-man war against the Confederate Navy although his weapon was the pen and not the sword. It was Dudley who kept the Union so well advised of the construction of Rebel vessels in British yards, of the comings and goings of blockade runners and of the recruiting of Confederate seamen in England.

Despite all the arguments over the *Alabama-Kearsarge* duel, even the leaders of the Confederate States Navy admitted that Winslow not only fought a sharp battle but that he also, in the words of Commander James D. Bulloch, C.S.N., 'reported the result in a clear, plain statement, neither concealing nor exaggerating any circumstance that would tend to enhance his own merit or depreciate his adversary.'

One such report was that sent by Winslow to Consul Dudley on 24 June 1864. The manuscript is to be found in the collections of the Henry E. Huntington Library at San Marino, California, and is quoted here in its entirety:

John A. Winslow
U. S. Kearsarge
Cherbourg June 24th '64

My dear Sir:

Your letter conveying congratulations, with many of the same kind, has been received. I thank you in behalf of my crew and officers for this evidence of the estimate you put upon the destruction of the *Alabama*. I think you will ere this reaches you find full particulars in the *Daily News* as Morse and the London Legation have written for them & [a] *Herald* Correspondent has been on board.

You know I could not challenge the *Alabama* without violating orders. I however got one [i.e., a challenge] from Semmes to wait until he was ready (a quite unnecessary request since he knew that was my business). The *Kearsarge* carried into action 160 men, 7 guns. Two

Dahlgrens—eleven inch, one light rifle—twenty-eight pounder, and four thirty-twos. The *Alabama* had eight—one more than the *Kearsarge*, consisting of [a] 100 pounder rifle, & heavy sixty-eights do. [ditto], [and] six thirty-two pounder guns. The *Alabama* had her coal bunkers filled, the *Kearsarge* was partly empty and her sides for twenty feet opposite the bunkers were hung with chains stopped to eye bolts. This was done on board and the chains belonged to the sheet anchors and were put there as a sort of protection when the bunkers were out of coal. The *Kearsarge* steamed several miles seaward to prevent *Alabama* getting back and [to] dispose of all questions of jurisdiction. Turning, she steered for close quarters with the *Alabama* & coming down, received three broadsides of the *Alabama* nearly raking us, which it was necessary to get to close in with her. No shot came on deck from this firing.

The action lasted one hour and two minutes when *Alabama* struck, and it was well for her, for she would have been most destructively raked. The *Kearsarge* had some 28 or 29 shot above & below, some five or six aft [the] mainmast which were the best, two shell in her chains on the side which were of no importance, one shot of 100 lbs in her stern post remaining (bad shot this).[1] The *Deerhound* ran off with prisoners which I could not believe any cur dog could have been guilty of under the circumstances, since I did not open upon him. We landed of *Alabama* 63 men, 3 dead, 17 wounded. Have five officers prisoners. All twattle about *Alabama* firing going down. Their vessel they say was a Slaughter House and when some of the men ran aft to prevent the flags being hauled down, Semmes took his pistol to blow out their brains. This is true and don't show there was any disposition to fire guns when sinking. We had three severely wounded. The *Alabama* has here now 74 men & officers, three dead, making 77. Of the number 18 are wounded. 39 were landed (officers and men) in England, making 116 men in all. Of the 116 left, about 20 are wounded and they say some forty lost, killed & went down in the ship. For want of means for providing, I was compelled to parole all except officers.

This is a memorandum of the whole story which, I am sorry from the number of letters I have to answer, that I cannot put in another shape.

I remain with thanks
Very truly yours
Jno. A. Winslow.

Thos. H. Dudley, Esq.
U. S. Consul, Liverpool

Letter-press copies of Dudley's reports

[1] On 20 June Winslow had written Gideon Welles that 'The only shot which I fear will give us any trouble is one 100-pounder rifle, which entered our stern post and remains at present unexploded.'

to the State Department are also found in Huntington Library. On the twenty-first of June 1864 he wrote letter No. 302, stating:

> The pirate *Alabama* has at last met the fate she deserved. She was sunk by the U. S. Steamer *Kearsarge* commanded by Cap. Winslow off of Cherburg [*sic*] on Sunday morning last after a fight of one hour.
>
> We only have here at Liverpool the Confederate account of the action. I send you slips cut from the London Times, Liverpool Courier, Daily Post and Mercury of today, giving all that is known about it. It has formed the main topic of conversation for the last two days. There is much regret among the merchants that she is lost. At least nine out of every ten persons deplore it. Cap. Semmes was expected here today. While I write a large crowd of persons are gathered on [the] chance to welcome him. It is proposed to give him an oration but I think the more prudent and thoughtful will back out and thus prevent it. Semmes has not arrived in town and my information is that he is not coming for some days. You will see by looking over the reports that her Majesty's subjects comprising the crew were properly cared for at the Sailor's Home on their arrival at Southampton. It is also worthy of note that the best practice of the *Alabama* during the action was shown by the gunners who had been *trained on board her Majesty's war vessel the Excellent in Portsmouth Harbor*. The English steamer *Deerhound* was on hand to render assistance to the *Alabama* and appears to have taken an active part in rescuing and running away with the officers and men belonging to this English Piratical craft built at the same yard, by the same persons and at the same time that the *Deerhound* was built.

In another letter to Secretary of State Seward (No. 306), Dudley sent clippings from the Liverpool *Daily Post*. One consisted of Winslow's letter to Dudley, quoted above, and the other was a printing of a letter of Mr. Stoddard, master of *Kearsarge*. At last Dudley was able to crow, 'We are now beginning to get the truth about the fight between the *Kearsarge* and *Alabama*!'

In the same letter to William H. Seward he opined that 'The English are very sore about the fight and loss of the *Alabama*, and I think, if anything, it has increased their bitterness towards us, at least so far as the people of Liverpool are concerned.' However, Dudley also made clear to Seward one more positive

result of the *Alabama-Kearsarge* battle accounts. In his letter numbered 305 he stated:

> This engagement has produced a profound sensation not only in England but throughout Europe. Its effects go far beyond the mere destruction of the *Alabama*. It has demonstrated the superiority of the American over the English Navy and many here so regard it. This nation would hesitate longer than she would have done one week ago before declaring war against the United States.

Contributed by Richard H. Dillon

A Footnote to the Loss of *Arctic*

Though the value to the historian of an eyewitness account is incontestable, occasionally subsequent reminiscences of a person intimately concerned with the events can impart an authenticity lacking in a contemporary recital. The passage of time may contrive to bring all into sharper focus and, though minute details of order and event may be lost, they can be supplied later if necessary while the more valuable elusive impressions of feelings and states of mind are captured. In the following letter, it makes little difference whether a telegram was sent from Montreal or Quebec. It is the import of the news it brought that is consequential.

The loss of R.M.S. *Titanic* on 15 April 1912 brought home to some an equally tragic sea disaster that had occurred fifty-eight years before with the loss of the Collins Line steamship *Arctic* and most of her passengers on 27 September 1854. This inspired my grandmother, Mrs. John Crosby Brown, to write to older members of her family and friends requesting them, before it was too late, to send her their recollections of the *Arctic* wreck.

Mrs. Brown's father-in-law, James Brown, a New York banker and president of the Collins Line, had been one of the heaviest losers in the sinking, for in one fell swoop he lost a son, three daughters and two grandchildren. A son-in-law survived by clinging to a piece of *Arctic*'s paddle box, and two other sons, including my grandfather who also had been abroad during the summer of 1854, were spared by having returned on an earlier ship.

One of Mrs. Brown's correspondents was eighty-five-year-old Judge Charles Cooper Nott, who at the time *Arctic* sank was a young lawyer in New York and who was, by his own confession, a 'very good friend' of James Brown's twenty-one-year-old unmarried daughter called Millie, one of those who were drowned.

Judge Nott, born in 1827, was an 1848 graduate of Union College, studied law in Albany and was admitted to the New York Bar in 1850, where he practiced until the outbreak of the Civil War. During the war he served first as captain, 5th Iowa Cavalry, and later as colonel, 176th New York Volunteers, and was a Confederate prisoner in 1863.

On 22 February 1865 he was appointed by President Lincoln judge of the Court of Claims in New York and he remained a member of that court for forty years, retiring as chief justice 31 December 1905. He was a voluminous contributor of editorials and reviews of timely topics to the press and magazines and he also wrote several books and serious works on legal subjects.[1]

This letter, written four years before his death on 6 March 1916 in his eighty-ninth year, demonstrates his clarity of mind and keenness of recollection. Sufficient time has meanwhile passed so that it now may be shared by its publication in The American Neptune without causing pain within our family.

I have contributed amplifying matter within square brackets and also a few footnotes where the facts stated have subsequently been proven in error. But the letter itself appears exactly as handed down to me from my grandmother and it may serve as documentation to the account I prepared of the

[1] *Dictionary of American Biography*, XIII, 579-580; *Who Was Who in America*, I (1897-1942), 907.

wreck for THE AMERICAN NEPTUNE on the one-hundredth anniversary of the loss of the ship. This was entitled bitterly, yet all too accurately 'Women and Children Last.'[2]

Princeton, N. J.
May 27th., 1912

Dear Mrs. Brown:

I must preface what I have to say by saying that I dictate entirely from memory, and that what I have to say of times, and places, and the order of events you must not rely upon. The facts and circumstances narrated, I believe, will be free from substantial error.

The drama of the *Arctic* in New York came in three acts.[3] The first and great act was when the first boats arrived I think at Holmes Hole, now Vineyard Haven, with substantially the whole story of the awful wreck. The second was the story which came in small parts from survivors who were picked up by vessels as they clung to spars. The third and, I think, last was when the telegraphic news came from Quebec, or Montreal, that Captain [James C.] Luce and Mr. George F[eatherstone] Allen and a young German [Ferdinand Keyn] had been rescued by a sailing vessel [*Cambria*] as they were drifting about on one of the paddle-boxes of the steamer.

She was a side-wheeler and went down in 60 fathoms of water, and when she struck bottom the paddle-box became detached from the vessel and shot up from its own buoyancy. It fell over, and as it fell, the edge of it struck the head of Captain Luce's little boy [Willie] and killed him instantly. The child had been in delicate health (he was eight years old), and had been taken by his father for the benefit of a sea voyage and at the time was in his father's arms.

You have heard that Captain Luce was censured for negligence and want of discipline on his vessel. As to the discipline, little if anything was said. No such thing as lifeboat drill was then expected by the public. The conduct of the crew was bad; few passengers were saved *and not one woman*; but the public recognized the fact that the bad conduct of the crew was a panic, such as sometimes carries away a well disciplined army—a sudden outburst which the officers of the ship could not have anticipated. The vessel was heading for shore, the day was fair, the sea was smooth, a signal gun was firing every minute, everyone was hoping for a vessel to appear or for shoal water to be reached. Then suddenly, like the unexpected eruption of a volcano, the engineers and stokers burst upon the deck with knives in their hands; they rushed for a boat, lifted in a cask of water and a box of hard tack, and in little more than an instant were rowing away from the ship.

The crew of the vessel knew what that meant. The engineers and stokers worked near the incoming water; they were the first to know the extent of the disaster and the first to draw the dreadful conclusion that the ship must soon go down.

There was a similar instantaneous rush by the crew for the boats; and the panic was such that they made not even an attempt to put into a boat either food or water. Up to this point everything had been quiet and orderly. The ship was supposed to be about fifty miles from the shore; and the Captain had headed her that way and had abandoned his first officer [Robert J. Gourlay] with a boat and boat's crew in the belief that the *Arctic* would reach shoal water before her fires were extinguished. All were placid and hopeful until the engineers' rush came; and then in less time than I am writing this, panic broke loose and every boat was gone [except one]. I have a certain merciless satisfaction in adding that the engineers' boat filled with strong men and carrying food and water was the only boat which never reached the land. [Actually only three of six boats survived.][4]

The fault of Captain Luce was the fault which has been strangely repeated by Captain [Edward J.] Smith, [of R.M.S. *Titanic*]—a total want of anticipation. The first thing he did after the collision [with *Vesta*] was to lower a boat and send his First Officer to inquire whether the other vessel was injured, and if she was, to tender her the good offices of the *Arctic*. The

[2] A. C. Brown, 'Women and Children Last,' THE AMERICAN NEPTUNE, XIV (1954), 237-261.

[3] Judge Nott is correct in that major news of the disaster reached New York in three installments, but his first two 'acts' are not correct. First word was the arrival on 10 October 1854 of 18 crew and Third Officer Francis Dorian via *Lebanon*, transferred to the pilot boat *Christian Berg* for the trip up New York Harbor. *Lebanon* received from the bark *Huron* these 18 men. Some 14 continued to Quebec in *Huron*. A total of 32 had been found by *Huron*. These were 31 men in one lifeboat and one man on a raft. The second group of survivors reported consisted of 34 men in two lifeboats including the second and fourth mates who arrived at Newfoundland and were reported by cable from Halifax and later telegraph from Boston on their return to New York. Third group reported consisted of Captain Luce and two others on *Arctic*'s paddle box and seven men on individual rafts. These men were all picked up by *Cambria* at sea and taken to Quebec, whence news of their safety was transmitted to New York.

[4] Other than First Mate Gourlay and six seamen dispatched to aid *Vesta*, it is not known the composition of the other two boats that were lost. The engineers' boat was reported to contain Chief Engineer J. W. Rogers and 14 other men from the engineering department.

next thing he did was blow a whistle for the recall of the First Officer and then immediately, to head his vessel for the shore, put on all steam and abandon the First Officer and his men to their fate. If he had not recalled them, they would have reached the other vessel and have been saved. The weather was calm for the next week; the sea smooth, so the First Officer and his men probably perished of hunger and thirst.[5]

There seems to have been no attempt to check the inrush of water by getting a sail over the leak.[6] The hole was in the bow of the vessel and by putting her at full speed he doubled the volume of water that rushed in. If he had stopped the vessel instead of increasing her speed, and done something to check the leak and kept the steam pumps agoing, and set his crew to getting spars over, and immediately making a raft, there would have been no panic; the vessel would have kept afloat three times as long as she did and probably the passengers and indeed all hands would have been saved.

Still men spoke low when they spoke of Captain Luce. I happened to be in Brown Brothers when the news of his rescue came. All that was said was said by Mr. James M[uncaster] Brown[7] and he spoke in a low tone: it was, 'Captain Luce will now be able to tell his own story.' The words on the printed page do not imply much or anything, but the low tone implied, 'and a very poor story it will be.'

Among the passengers rescued by the boats was Mr. [William W.] G[ilbert]. He had been a friend of the family for several years—I have met him repeatedly at University Place.[8] He was one of their party on the voyage, so intimate that the newspapers credited him with being 'engaged to Miss [Maria Miller] Brown.' When he came into New York alive and well, there was an indescribable chill which ran through the entire community. Men and women looked at each other and said, 'Not one woman saved!'

Mr. G--- was a banker on Wall St. [Gilbert, Cobb & Johnson]. His story was that he had gone to secure and hold seats for them in one of the boats and had been carried off by the inrush of the crew. When he told that story all witnesses who might contradict it, had gone down with the ship. But one of those witnesses [George F. Allen] came up and to the astonishment of the whole world, lived; and he did not confirm Mr. G's--- story. What he said was not made public.

Soon after Mr. Allen returned to New York, Aunt Hunter [Mrs. James Couper Lord, his sister-in-law, née Margaretta Hunter Brown] went to his room and he told her his woeful tale. It was understood, at least by us outsiders, that he would never speak of it again and that he must never be questioned. So far as my knowledge goes, these determinations were adhered to. His story as it came to me from my mother who heard it, I think, from Mrs. James Brown herself, was this:

When the collision came, Mr. Allen was in his stateroom. He was a very intelligent man, prudent, thoughtful, farseeing. The luncheon table was set and as he passed through the dining salon on his way to the deck, he seized a cold fowl, wrapped it in a napkin and put it in his pocket. That act saved his life and the lives of Captain Luce and the young German.

On the deck he found everything calm, a calm which continued to the very end. The family stood together and talked little but composedly. Near them were the brother and sister of the Collins family [Mary Ann and Henry Coit Collins]. Someone proposed that they go to the other side of the ship for some supposed advantage they would find there; but William [Benedict] Brown looked about him and in his characteristic quiet way said that he did not think one side of the ship could be better than the other.

There were seven, as I count them, Mr. and Mrs. William B. Brown, Mr. and Mrs. George F. Allen, their two infants and Miss Millie [Maria Miller] Brown. I have heard recently that there were nine in the party, but I think the other two were the two nurses. George Allen had taken their baby [Herbert, age one] from his wife who had taken it from the nurse and was holding it, when Grace [Brown Allen] suddenly turned to him and said, 'George, you know that father and mother did not want Millie to go and that we promised them that we would bring her safely home. We must do all that we can to keep that promise. Give me the baby; you must save Millie.'

She took the baby and Millie stood beside him. But when the crash came, when the great tumultuous wave came roaring over the bow of the vessel,[9] the maternal instinct was too strong for her resolve; she placed the child back in her husband's arms and cried, 'No George, you must save the baby.' And then they all went down.

[5] Actually the weather turned bad three days after the collision, *Vesta* arriving safely at St. John's, Newfoundland, just before the change. Compasses were not reliable in the iron lifeboats and undoubtedly the first mate's boat, lost in the fog, drifted about until overtaken by storm.

[6] There was a very earnest endeavor to get a sail over the holes in the bow to slow the inrush of water, precluded by the fact that part of *Vesta*'s stem and anchor had broken off and were wedged in *Arctic*.

[7] James Muncaster Brown, a partner of Brown, Brothers and Company, then as now at 59 Wall St.,' was a cousin of James Brown, founder of the New York house, so many of whose family were on board *Arctic*.

[8] James Brown's residence, corner University Place and Ninth St., New York City.

[9] Actually *Arctic* went down stern first.

He came up and close beside him came Captain Luce and then the paddle-box came rushing up and fell over on its side.

I cannot tell you how long they floated on that paddle-box, nor the name of the vessel that rescued them.[10] My hazy recollection is that the telegram that told of the rescue came from Montreal. It may be that they had to go to Montreal at that day that they might get a railroad to bring them to New York, and that it was their starting from Montreal for New York that I remember.

The community was awestruck. Men whispered to each other that they must have gone down as far as the vessel went. To have come from the depths of the ocean was like rising from the grave. Wherever the train stopped on its way from Montreal to New York in the day time, a crowd of men stood in silence with their hats off. It was no time for cheers or speeches but every man wished to give this mute expression of his pity.

In the city, when the question of discipline and misconduct was broached by one man, the other said in reply, 'Yes, but he lost his boy, and he lost his ship, and he lost his professional standing, and he went down with his ship. Poor fellow; he has had punishment enough. We must not strike a man when he is down.'

You have asked me to tell you all that I can recall of the family. I come to the one I knew best.

Millie Brown and I had been what we called 'very good friends.' She was as healthy and happy a human being as I have ever seen, unfailing in her cheerfulness. She was little more than a child when I first knew her, but she was a child who could listen and talk like a woman and while full of fun, had also an abundance of the best sense. One of the happiest Sunday afternoons that I can remember in my early life was in a summer house at Clifton on the brink of the Palisades. Robert Potter and I were the two young men of the party; and the two young girls were Millie Brown and Amy Fearing, who was Millie's most intimate friend and the niece of Captain Luce. I remember Mr. [James] Brown saying to her, 'Well Amy, the *Arctic* did not come in yesterday;' and that she answered, 'No sir, Uncle said that the return voyage would not be a fast one.' It is strange, it is very strange that those words relating to the *Arctic* are the only words I can recall of that week-end visit. What a fearful significance that the word '*Arctic*' had for each and all of us in little more than a year!

The evening before they sailed, I went to University Place to say good-bye. When I came away Millie came with me to the head of the stairs, and as I went slowly down we continued our talk, she leaning on the rail of the stairway. A number of our relatives and friends had come back from England with a great deal of English criticism and many unpleasant comparisons. Millie and I had been staunch Americans and had fought under the flag. When I reached the first landing I looked up and, alluding to this, said with all the emphasis that I could put into the words, 'And Millie Brown, whatever you do or don't do, don't come back with any prejudices against your Country.'

She answered in a peculiar tone such as I have never heard from her before, a note of sadness entirely new to me, 'I shall never do that.'

I was struck with it then and thought that she was a little homesick before she started and secretly wishing that she were not going. I think so still. I do not know why, but the tone seemed to me then intended to imply a very strong assurance that she would continue to be just as loyal as she and I had been. I have never forgotten that tone, indeed I remember it more distinctly than the words. Did there come over her a shadowy presentment that she might never return to her native land? These words were her last words to me.

A few days after the dreadful news had reached New York, I saw, in an out-of-the-way place in one of the papers, a short paragraph saying that a sailor [Peter McCabe] was at the Sailors' Snug Harbor [on Staten Island] who had been one of the crew of the *Arctic*.[11] He floated on a spar for many hours and had been picked up by a passing vessel [the ship *Huron*]. The reporter had got very little out of him, nothing indeed but this:

There had been a young lady clinging to that spar, one of the first-cabin passengers. He had seen her with a party of her friends on the deck; she was a great deal up on deck, but he did not know her name or the name of her friends. She spoke, while they floated on the spar, but not to him. All that she said was, 'Oh! my poor father and mother! O! my poor father and mother!' She said this a number of times, but gave no message nor told him who she was. After many hours she said nothing, and at last let go the spar and went down.

I believed then that that girl was Millie Brown; and I felt confident that if I could see that sailor I could draw from him a description and facts and circumstances that would make the matter certain one way or the other. I felt very sure that Captain Luce would have had her beside him often on the deck, and that a member of the crew would note his unusual

[10] The three out of eleven men who survived on *Arctic*'s paddle box clung to it for two nights and a day until rescued by *Cambria* of Quebec, whence they were taken.

[11] Waiter Peter McCabe was making his first trip on *Arctic*. He was the sole survivor of a 26-hour ordeal on a raft originally containing 72 men and four women. Actually McCabe gave a very extensive account of his adventures. He was picked up by *Huron* shortly after she rescued the lifeboat commanded by Third Mate Dorian.

attention to her and remember her as the young lady to whom the Captain was often speaking.

I said nothing to anybody, not even to Clarkson or Robert Potter; it seemed too dreadful a thing to talk about and I started the same afternoon for Sailors' Snug Harbor. I had almost reached the ferry house, my hand indeed was in my pocket feeling for my money when I suddenly asked myself this question, '*If she was Millie Brown?*' Yes, if she was Millie Brown what then was I to do? Should I go up to University Place and inflict this fresh, excruciating wound on the poor father and mother? What could be more terrible to them then than the thought of that girl floating alone on the great ocean, thinking of home and of them, growing weaker and weaker, and at last letting go her hold and going down into the dark water?

To believe that she went down close beside those who were dear to her and that her consciousness lasted only about thirty seconds was their one consolation. Should I take it away from them? Emphatically no!

And if I did not tell them, what then? If I kept my discovery locked in my own breast would it not be a fearful secret to carry? I put my money back in my pocket, wheeled around and went back to my office in 61 Wall Street and resumed my work. Later, when I had rested my mind as it were, I thought it over and believed that my decision was a wise one. I never told a single human being of what I have just told you, so fearful was I that it might come to Mr. or Mrs. [James] Brown's ears. Now that they have passed away, I tell it to you. I believed then, and believe now that the girl clinging to the spar was Millie Brown; and I think now that it is due to her that this should be known by your children and grand-children, who did not know her, and who have no old wounds to be re-opened. It is due to her that they should know of one so near to them that in that awful situation, her last words were, 'Oh! my poor father and mother! Oh! my poor father and mother!'

There is one thing about which you have asked for information which is not properly a part of the story of the wreck. I am reluctant to tell it in such close connection with the awful realities which I have been recalling, and yet there is no reason why I should not. It is what you call 'The Fortune-teller.'

Howard Potter[12] was a man who disliked the supernatural. He always sought to explain away and account for what seemed a supernatural occurrence. But he told me this, and told it late in life.

On a Thanksgiving Day, or some other holiday, and after an early dinner, he and Mr. James Couper Lord[13] and William [Benedict] Brown went out for a long walk which brought them to Barnum's Museum. One of them chanced to say that while he had been a New Yorker all his life, he had never been in Barnum's Museum. The others said the same thing, substantially, and as a part of their holiday they all went in; soon they came upon a little shriveled old woman. I am not sure that she was Barnum's original 'Joy Heath' or whether she was some lesser celebrity; but she told fortunes. What she told for Howard Potter and Mr. Lord, he did not repeat, and said there was nothing remarkable in it, but when she came to William Brown she raised her eyes from his hand and looked in his face; and Howard Potter as he told it said, 'I can well remember how she started and with what an awe-struck gaze she looked up at him and said: "I see an awful wreck in your hand, sir." '

A chill ran through Mr. Potter and Mr. Lord as each subsequently well remembered. Mr. Brown did not seem much affected and asked some question indicating that he wanted more particulars, and she answered with great solemnity, 'I can only say, sir, that I see an awful shipwreck in your hand.'

Who can say what is and what is not in the material world? Can you? I can not.

I have kept this letter over to see whether memory would bring in something more, or would exclude something which I have already written. Imagination will play tricks on memory, I know; but I now feel sure that all I have said is substantially true.

Yours very sincerely

CHARLES C. NOTT

[12] Son-in-law of James Brown, husband of Mary Louisa Brown, later a partner in Brown Brothers & Co.

[13] Son-in-law of James Brown, husband of Margaretta Hunter Brown.

Contributed by Alexander Crosby Brown

Notes

The Leap Year That Wasn't

Sailing home to Boston after selling in Canton a cargo of sea-otter skins from the Northwest Coast of America Captain Crocker of the brig *Hancock,* owned by John Dorr & Sons of Boston, took time off on Sunday, 15 April 1800, to check up on the calendar. The result of these researches was entered in the log for that day (now in the Widener Library at Harvard University as part of the Dorr Papers) in the following words: 'By several books we find this to be Leap Year & consequently this is the 15th day of the month (Saturday also having been entered as the 15th), as I allowed only 28 days in February.'

Ten days later further study led to a change of view. The log entry for 25 April runs: 'We alter the day of the month because it is not Leap Year as Hamilton Moore told us it was, but for particulars of this refer to Astronomy.'

Moore, the writer of the work to which Captain Crocker had referred, had been misled by failing to notice an exception to the leap year rule that Pope Gregory XIII had laid down in 1582. The Pope retained from the Julian calendar the rule that every fourth year should be a leap year but provided that those years divisible by 100 but not by 400 should not be leap years. Thus 1600 was a leap year and 2000 will be but 1700, 1800 and 1900 were not.

In the case of *Hancock* first thoughts about leap year were right and second thoughts were wrong. This was reversed for another American vessel, *Diana* of New York, James McCall master, which was collecting sealskins for the Canton market in the Falkland Islands on 28 February 1800. *Diana*'s log, now in the Essex Institute at Salem, Massachusetts, has this entry for 29 February 1800: 'The shallop sailed to supply the crews on the islands.' On 2 May, *Hope* of New Haven, Nathaniel Ray master, anchored alongside *Diana.* Captain Ray was better informed about the Gregorian calendar; the log keeper of *Diana* made this entry: 'N.B. There is only 28 days in February this year so I corrected my mistake.'

Hancock, named after John Hancock of Boston, was a year and seven months out from Boston when the mistake about the calendar occurred. She had sailed from Boston on 28 August 1798, with a crew of twenty-four under Captain Crocker. It was not the first venture of the Dorrs in the fur trade of the Northwest Coast. In 1795-1797 their schooner *Otter,* commanded by Ebenezer Dorr, had made a venturous voyage to the Coast. She had carried away from Botany Bay the 'Scottish Martyr,' Thomas Muir, and landed him at Nootka Sound on the west coast of Vancouver Island. *Otter* also spirited away eleven ordinary convicts, one of whom was a Negro blacksmith born in Philadelphia, and another, a woman, known as Jane Lambert.

Muir secured a passage to Monterey, California, in the King of Spain's patrol and survey vessel *Sutil,* commanded by Don José Tovar. At Monterey, Muir gave to Don Diego Borica, Governor of Upper California a portrait of himself that he had carried from England to Botany Bay and thence to Nootka Sound. Borica sent the portrait to the Viceroy of Mexico who forwarded it to his brother-in-law, Manuel Godoy, Prince of the Peace, the favorite of Queen Luisa and the virtual ruler of Spain. The portrait is, or was, until recently, preserved under glass in the Archives of the Indies at Seville.

While Muir did not speak Spanish he found a good interpreter in John Ken-

drick the younger, son of Captain John Kendrick, pioneer in the Boston fur trade on the Northwest Coast. The younger Kendrick had entered the Spanish service at Nootka Sound in 1789 and was now classed as a second pilot in the King's service. He had served as a pilot on the Manila galleons which had been plying across the Pacific between Acapulco in Mexico and Manila since 1582 and were to continue their regular service till 1813.

Borica sent Muir to Mexico City by way of San Blas on the west coast of Mexico. With Muir, Borica sent five seamen from *Otter* whom Tovar had shipped on *Sutil* at Nootka Sound. From San Blas to Mexico, Muir & the seamen were accompanied, perhaps as interpreter, by Joseph Burling O'Cain, a Philadelphia Irishman whom an English vessel had landed at Santa Barbara, California, in 1794. O'Cain was to pioneer the practice of bringing Aleuts down from the Aleutian Islands to hunt sea otters along the coast of California.

From Mexico City Muir was sent to Havana by way of Vera Cruz. After many adventures he reached France after being landed at Cadiz. He died at Chantilly near Paris on 27 September 1798.

Captain Dorr took *Otter* to Monterey for supplies, entering port on 26 October 1796. He still had more men on board than he needed and he asked Borica for leave to land some of them. Borica refused the request but Dorr landed them all the same. *Otter* cleared from Monterey on 6 November; that night Dorr put eleven persons ashore on a point just outside the harbor. Eight were convicts from Botany Bay, including the woman; the others were Andrew Lambert of Boston, carpenter of *Otter*; the carpenter's mate and a man whose original trade had been that of a wigmaker.

The woman admitted that she had been transported from England to Botany Bay but asserted that long before that she had been married to Lambert, the carpenter, and that they had a daughter of thirteen who lived with her grandparents. As she had given her age as twenty-seven and as Lambert had stated that he was twenty-five the Spanish authorities were not impressed by the story. In Mexico Father Nicholas Arsequi, an English-speaking priest, instructed Andrew Lambert and Jane in the Catholic faith. They were received into the Catholic Church and allowed to stay in Mexico. Lambert went to work in the Vera Cruz shipyards and proved a capable worker and a good citizen. Jane, who had a liking for liquor, was placed first in the household of Juan Oqueli (O'Kelly) of Mexico City and then in that of Tomas Murphy of Jalapa, fifty miles from Vera Cruz. Lambert's loving letters to her, written for him in English by a Spanish lady with a kind heart but very erratic ideas of the English language, are still preserved in the Spanish archives.

There is no log of *Otter* amongst the Dorr Papers. François Peron, a native of Brest in Brittany who shipped as mate on her at Sydney, New South Wales, wrote some account of her visit to the Northwest Coast and California. A French vessel from Mauritius had landed Peron and three other men on the Isle of Amsterdam, far out in the Southern Ocean, where they were to collect sealskins. War between England and France broke out in 1793. H.M.S. *Lion* captured the French vessel, *L'Emilie*, at Canton and the four seal hunters had been marooned on Amsterdam for more than three years when the English storeship *Ceres* took them off and landed them at Sydney.

The log of *Hancock*, the next vessel that the Dorrs sent to the Northwest Coast, has so far escaped the notice of historians. This may be due to the fact that the other documents in the collection are of later date and deal with matters of a quite different kind.

Sailing by way of Cape Horn *Hancock*

made her first landfall on the Northwest Coast on 10 April 1799. It was far to the north, in latitude 54° 24′ N., or at the northern end of the Queen Charlotte Islands.

This was very close to the place where the first known contact between Europeans and the natives of what is now British Columbia had taken place fifteen years earlier. On 11 June 1774, the King of Spain's frigate *Santiago,* commanded by Juan Perez, had sailed northward from Monterey in California to assert the rights of Spain and to counter the possible claims of Russians reaching out from Siberia. Perez sighted the land on 19 July and stood in for Dixon Entrance between the northern end of the Queen Charlotte Islands and the Prince of Wales Islands at the southern end of the Alaskan Panhandle.

For three days *Santiago* lay becalmed or glided slowly along with light winds. On the second day twenty-one canoes, manned by about 200 Indians, paddled out to the ship. They sang and scattered feathers on the water. They were eager to trade but only two of them mustered up enough courage to climb on board. They offered furs, fish, wooden boxes, mats of wool (of the mountain sheep) and hair in return for knives and iron. They already had a little iron and copper, which had perhaps drifted down from the Russian fur traders in the Aleutian Islands. The Spaniards did not land.

Santiago anchored on 7 August, on her return voyage, at a place on the west coast of Vancouver Island which Perez called San Lorenzo, identified by later Spanish navigators as Nootka Sound. There fifteen canoes brought out from 80 to 100 natives who eagerly bartered furs and fish for iron rods and glass trinkets. Four years later, when Captain James Cook came to Nootka, James Burney, brother of Fanny, secured two old-fashioned silver tablespoons from the Indians in exchange for a pewter wash-basin. Probably the spoons had come from *Santiago.*

When *Santiago* returned to Monterey on 27 August some of those on board told a strange story to the Franciscan Father Junipero Serra, Apostle of California, who set it down in a letter dated 31 August. They said that some of the men in the canoes at the Queen Charlotte Islands were well set up, with white skins, fair hair and blue eyes, dressed in long robes like pilgrims and wearing peaked hats of leather or fur.

There have been many stories of 'white Indians' from many regions of the Americas. They range from the 'blonde Eskimoes' of Coronation Gulf in Arctic Canada to the legends of the 'City of the Caesars' in the wilderness of Western Patagonia. This account is unusually clear-cut and definite. It is true that Burney wrote of the Nootka natives: 'We afterwards discovered through the paint, grease and dirt under which their skins had been concealed that they were a white people.' But Burney leaves it vague.

As the first comers to the Coast Perez and his men could no doubt have bought sea-otter skins at a very cheap rate in knives and glass beads. They were probably not particularly interested in these skins for it is not likely that they knew that fine sea-otter skins were worth almost their weight in gold in China. The Spaniards had secured some sea-otter skins from the island of Los Cedros off the coast of California but had done nothing much about them.

Far to the northwest in the Aleutian Islands the Russians had begun to seek sea-otter skins. But the rush to the British Columbia coast was touched off, after some delay, by the experience of the seamen on Captain Cook's ships H.M.S. *Resolution* and *Adventure* when they came to Macao in December 1779 and learned of the high value that the Chinese set on the skins. In 1785 James Hanna sailed to the Northwest Coast in search of sea-otter skins and soon the rush was on. At first it looked as if the English, coming round the Horn or

across the Pacific from China and India (and sometimes sailing under foreign flags to elude the monopoly of the East India Company or the shadowy rights of the South Sea Company) would divide the trade with the Russians.

Hancock represented a third competitor, the seamen of the New England region of the new United States. In 1788 the first Boston fur traders came to the Northwest Coast. By 1799 the competition was keen and the Indians were sharp traders.

Captain Crocker soon found this out. On 15 April *Hancock* anchored in a bay near Cape Pitt. Canoes came alongside at once but the Indians in them had no skins to sell. It was not till 18 April that the captain was able to make his first deal; then he secured three good sea-otter skins but the owner insisted on a trade musket for them. Trade muskets were no great matter but the price was high. Next day business was better. He bought fifty-eight prime large sea-otter skins and three small prime pelts, as well as sixteen 'cotpacks,' presumably garments or squares made up of pieces of skin.

As news that there was a vessel at Cape Pitt spread, more canoes came with skins. On Sunday, 28 April, Captain Crocker bought sixty sea-otter skins. In Massachusetts there were strict laws against trading or working on the Sabbath but in the Northwest there was a saying that Sunday never came on to the Coast. A vessel that seemed to have a broken topmast was sighted to the southward on 25 April but she passed out of sight and no more is recorded of her.

Mutiny broke out on board on 2 May, when the captain was away with a boat's crew seeking to beat up business. Led by George Martin and John Wilson the mutineers took control of *Hancock* and seized the captain when he came on board. Having taken the ship the mutineers did not seem to know what to do with her and decided to try their luck on shore. Taking eight muskets with which to protect themselves from the Indians thirteen out of the twenty-four men in the crew went ashore. Their names were George Martin, James Martin, Ebenezer Baker, Nathaniel Hantaway, Swift Newell, Daniel Blake, Edward Lawson, John Flavill, Edward Johns or Jones, John Wilson, John Appleton, the carpenter, and the cook. The names of the last two are not given.

Seamen of that age lived hard and knew little of convenience, cleanliness or comfort. But the Indians of the Northwest Coast lived in far greater dirt and discomfort and many of them were tough and truculent. Conditions on shore very soon shook the resolution of some of the mutineers. On 7 May the log keeper made this entry:

'Daniel McCarty Prince told the captain that he had received some lines from some of the men on shore intimating that a party of them wished to come on board. Our ship's company being weak and the ship leaky the captain concluded to allow to come on board John Appleton, Edward Jones, James Martin and the cook.' The leakiness of the ship may have had much to do with the desire of so many of her crew to leave her.

Next morning Swift Newell and Ebenezer Baker came down to the beach and begged the captain to take them on board. They said that the other mutineers had gone away with the Indians. The captain told them that he did not want them but that if they would return four of the muskets he would give them a cask of beef and send their clothes on shore. However it did not appear that these two had any of the muskets.

On 9 May Newell and Baker came off to the ship in a canoe. When the captain warned them not to come near *Hancock* they cried and begged to be allowed to come on board. They said that the Indians had made a terrible disturbance and that they had saved their

lives only by fleeing from the native village and hiding in the woods. The captain repeated his refusal to let them come near the ship. They then begged him to let the canoe follow the ship until it was out of the sound even if he would not let them come on board. They said that they would certainly be murdered if they returned to the place whence they had taken the canoe. With tears in their eyes they begged for protection from the Indians.

So the canoe tagged along behind as *Hancock* began to sail out of the sound. As the ship, tacking her way out, passed close to the point at the entrance John Wilson, the mutineer leader, hailed her from the shore and asked if he and those with him could be taken on board, as they were afraid that the Indians would take their lives. 'We made no answer and drew out of sound' says the log.

Baker and Newell followed the ship in their canoe. At 9:00 A.M. they had paddled four miles but were falling behind and were half a mile astern. Then the ship's company saw that the Indians were in pursuit of them and coming up fast. 'They appeared to be paddling very fierce and scritching and hollowing very loud.' Moved by this sight Captain Crocker hove to and asked all hands if they would like to have the two mutineers come on board. They all said that they would rather not see the two men murdered. The captain then told Baker and Newell to come on board. They did so and set the canoe adrift. Cape Edgcumbe was then seven leagues away.

On 17 May *Hancock* met *Despatch* of Salem, Captain Breck, which had only 100 sea-otter skins. She had been at Chigarney with *Eliza*, which had 2,100. *Ulysses*, Captain Lamb, had also been at Chigarney and had 140 skins.

On 1 June, when *Hancock* was in Norfolk Sound, the mutineers left on shore turned up again. The log says: 'We saw on the beach the people we had left ashore: two or three came off and desired to ship. The captain told them not to come any further or he would fire. They turned toward the shore but begged hard of the captain to let them aboard again.'

At Norfolk Sound Captain Crocker heard the story of another mutiny. On 1 June Richard Cleveland of Salem, master of the cutter *Dragon*, came on board *Hancock* for supper. Cleveland, a veteran master mariner at twenty-five, had come from Macao and marooned half a dozen mutineers on the little island of Quemoy, on the China side of Formosa Straits. Cleveland was probably the first American to visit Quemoy, an island that was to become very widely known more than 150 years later.

Cleveland had left Salem in 1797 as master of the bark *Enterprise*, which was to fetch a cargo of coffee from Mocha on the Red Sea coast. He touched at Havre and learned that the owners had ordered him to bring the bark back to Salem. He left the mate to take her home, bought the forty-three-ton cutter *Caroline* on credit and set sail for the Isle of France (Mauritius). *Caroline* was wrecked on the coast of France but he repaired her and sailed again with a crew consisting of a Nantucket lad as mate, a Prussian who hardly knew how to put two ends of a rope together, a Negro cook, and two boys, one English and one French. He sold *Caroline* at Capetown and went by way of Batavia to Macao where he bought *Dragon*, a cutter about the size of *Caroline*.

Deciding to try the fur trade on the Northwest Coast he shipped at Canton a crew of twenty. Of these, two were Americans and two runaway convicts from Botany Bay.

The other sixteen were English, Irish, French and Swedes, mostly deserters from European vessels at Canton. Cleveland himself noted that the two convicts 'served to complete a list of as accomplished villains as ever disgraced any country.'

Mutiny broke out very early in the

voyage, as *Dragon* was beating up Formosa Straits against the monsoon. *Dragon* was then off the island of Quemoy; Cleveland and those who stood by him pointed two four-pounder guns crammed with grapeshot at the mutineers and told them that they would be blown to bits unless they agreed to go ashore. They went and Cleveland 'left on the island of Quemoy (which is about 350 miles northeast of Canton) six of my most able men.' When he returned to Canton from the Northwest Coast he found that the six marooned mutineers had reached Canton six months earlier and had told sad stories of hardship, danger and cruel usage.

When he reached the fur coast Cleveland rigged screens of hides along the decks in order to keep the Indians from seeing how small his ship's company was. He had on board trade goods, bought in Canton, to the value of 20,000 dollars. He states that he gave one flintlock musket for eight prime sea-otter skins. He seems to have done better business in Norfolk Sound than did *Hancock*. The latter's log for 2 June has the entry: '*Dragon* had 1700 skins, and outbid us.'

On 10 June *Hancock* was in Port Mulgrave where three men, a Russian, a Kodiak (Aleut) hunter and an Indian, came on board *Hancock* from a canoe. The Russian said that the Russian merchant who owned the brig *Hanoveria* had 1,300 Aleut hunters out after sea otters.

Dragon appears again in the entry for 20 June, which runs: 'Understand that two of the lads we left went away in *Dragon*; all the rest we saw go in the Russian brig.' *Dragon* ran on a rock and was almost lost; Cleveland worked her off and reached Canton with skins that he sold for 60,000 Spanish dollars.

On her voyage from the Coast to Canton *Hancock* sighted Hawaii on 5 October 1799. She put into port and 'on the 7th the King (Tamehameha I) came on board with his suite.' There Ebenezer Baker, the ex-mutineer left the ship while Thomas Appleton (perhaps related to John) shipped to work his passage to Canton.

Hancock sighted the Bashee Islands on 15 November and entered Canton River on the eighteenth. On 3 December Jack and Jeremiah Smith came on board 'to work.' The carpenter of *Hancock* had been one of the seven mutineers who did not return to the ship. On 4 December the carpenter of *Hope* of Providence, Rhode Island (really *Ann & Hope*, a fine new 550-ton vessel owned by Brown & Ives) went to work caulking *Hancock*.

Hancock completed the circuit of the globe by returning to Boston by way of the Cape of Good Hope. Except for the confusion over leap year the voyage was without notable incidents. The vessel was back in Boston after a voyage of something under two years.

THOMAS DUNBABIN

FOUR AMERICAN CROSS-STAVES

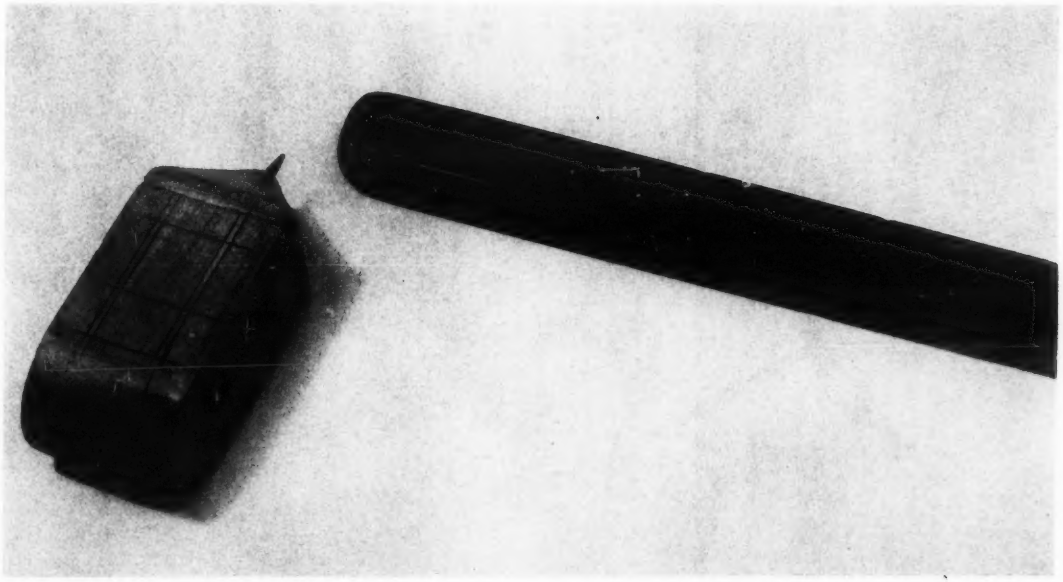
JUST before my notes on the cross-staff were published in THE AMERICAN NEPTUNE,[1] Mr. Alexander Orr Vietor had the good fortune to acquire from the attic of an old Long Island house three cross-staves. All were once owned by Captain Solomon Davis. Sharing his find Mr. Vietor generously presented one to the museum at Mystic Seaport and one to The Peabody Museum of Salem. And as a result of the publication of my notes a fourth staff has been recognized for what it is instead of the yardstick it was believed to be. This staff has been deposited in The Peabody Museum. Not a single original cross has been preserved on any of the staves.

Mr. Vietor has kindly supplied me with the following description of the staff in his collection.

It is made of ebony 33¾ inches in length overall chamfered at the eye end, with a $\frac{9}{16}$-inch section. The four sides

[1] Vol. XIV (July 1954), 187 ff.

PLATE 8



The 'Dutch Shoe' and the engraved end of the Holyoke staff

Courtesy of the Peabody Museum of Salem

PLATE 7

PLATE 8

The use of the cross-staff for fore and back sights. BB is the 'Dutch Shoe'

are numbered with side 1 marked 'I v K,' probably the initials of Johannes van Keulen, the celebrated Amsterdam instrument maker. Side 2 within a cartouche of stamped stars carries the date '1740.' The number '18' or '81' is stamped into the end of the staff. The range of the scales with complementary zenith scales is side 1, 90° to 37°; side 2, 90° to 25°; side 3, 60° to 13°; and side 4, 30° to 6°. Side 3 has a 90° check point and side 4, check points at 90° and 60°, all outside the regular scales. These enabled a quick determination of the proper spot on the eye bone to hold the staff to prevent distortion of the angle during an observation. In addition the check point provided an easily measured angle for the replacement of a lost or damaged cross. The numeral stamped in the end probably is an annual serial number, doubtless duplicated on each cross to prevent confusing crosses with those of another instrument.

The Vietor-Mystic staff is also of ebony, 5/8 inch square, 33 5/8 inches long. The but end is stamped '5'; the eye end is the usual four-sided cone. Enclosed in a label of stars similar to the Vietor staff is the date '1750' with no maker's or owner's name. The sides carry altitude scales of 90° - 34°; 90° - 40°; 60° - 30°; and 30° - 3° with the zenith scales. Sides 3 and 4 each have a check point for their proper crosses, 90° and 60° respectively.

The Vietor-Peabody staff (M7799) is made of ebony 32 7/8 inches long with its section 5/8 inch square. Dated 1748 the maker's or owner's name was not inscribed although a space enclosed at each end by three stars arranged in a triangle had been provided by the maker. The upper end is flat and carries the numeral '10' stamped into the wood. The lower or eye end is chamfered on each side to fit the eye bone. The sides are marked 1, 2, 3, 4, with altitude scales side 1, 90° - 35° divided to 15′ to 80° and to 10′ below; 90° - 25° divided to 30′ to 60° and 10′ below; 60° - 13° divided to 30′ to 30° and to 10′ below; and 30° - 6° 30′ divided to 30′ to 20° and to 10′ below with the appropriate zenith distances on parallel scales on each side. There is a 90° check point on side 3 and both a 90° and 60° check point on side 4.

At the time Mr. Vietor obtained the three staves, dated 1740 marked I v K 18 or 81, 1748 number 10, and 1750 number 5, he also secured a backstaff inscribed 'A. Lamb New York 1747.' Since I have not been able to compare the stamps used on the instruments, a guess cannot be made as to whether van Keulen made all three staves, or if Lamb turned out the two unmarked ones, perhaps copying a sample from van Keulen. From the dimensions and graduations it is obvious there is a definite relationship among the three.

While lacking its crosses, the newly discovered fourth staff has an attachment which seemingly is unique. This is a boxwood slider 2 1/8 inches long with a thickness of 1 inch and a width of 1 5/16 inch, one end shaped to a semicircle, the other to a four-sided cone in the apex of which is a pointed steel pin 3/64 inch diameter by 3/16 inch long. Apparently this device which superficially resembles a wooden shoe was used as a horizon vane when making a back sight and is probably the 'Dutch shoe' mentioned as early as 1676. The staff itself is of ebony 36 inches long with a 1/2-inch square section. Engraved near one end is the name of the owner 'Edward Holyoke 1718.' Holyoke was born in Salem in 1669, graduated from Harvard in the class of 1705, served as pastor of the Second Church, Marblehead, from 1716 until in 1737 he became President of Harvard College and retained that office until his death in 1760. In addition to his professional duties he was an active practitioner of mathematics and astronomy, but there is no evidence that he taught navigation to seamen.

A careful examination of the staff seems to show that it has had two adjacent sides scraped down and new scales added. Then the horizon vane was made

for the reduced staff. The Holyoke inscription is in italic characters engraved, not stamped on one of these sides. On another there seems to have been an inscription now illegible and the date '1666.' Through the years the scales have been so worn that it is impossible to determine the ranges each included. The clearest is a full yard measure, divided into inches and subdivided into quarter inches. Being of everyday utility long after observations of the sun's meridian altitude had ceased to interest its owners this scale probably led to the preservation of the staff. This side is marked '2.' An adjacent side is marked '1' and holds the obliterated inscription and the date '1666.' The two sides believed to have been reduced show no numbers; one of these carries the Holyoke name.

With the greatly increased interest in the history of navigation and in the instruments used by navigators it is hoped more cross-staves will be recognized and described.

M. V. BREWINGTON

A New England Searfaring Family

The day before Christmas in the year 1883 found the Maine schooner *Rockaway*, of Boothbay, 41 tons, having departed from York, Maine, for Boston with a heavy cargo of bricks, in the vicinity of Thacher's Island off Cape Ann attempting to beat up into Boston Harbor against heavy winds. The winds increased steadily, canvas began tearing from the bolt ropes and the master went about and went with the wind endeavoring to make harbor at Portsmouth, New Hampshire. All went well until the wind shifted in the northeast and the vessel's predicament became worse. Unable to beat against the wind to Portsmouth and having a lee shore close by, the master dropped anchor just north of Rye Beach and hoisted distress signals, hoping that they would be seen from shore, and word of their plight transmitted to the Life Saving Station about three miles down the coast. Meanwhile, the northeaster brought with it a blinding snowstorm, but luckily people on shore had seen the distress signal and were on their way to the Station to obtain help. The men of the Life Saving Service immediately launched their surf boat but a minor accident occured in attempting to breach the surf and they were forced to beach the craft in order to obtain another steering oar. At this time, rather than launch again and pull the three miles against the wind, the men, with the assistance of a horse and team hauled the boat overland through the howling gale to Rye Harbor, somewhat closer to the anchored vessel, and then made their way across the remaining distance of water. They were able to reach the schooner without mishap and much to their surprise found but one man, Capt. Kingsbury, aboard! The only other members of the crew were his wife and fifteen year old son!

The seafaring family were taken off from the schooner and spent Christmas Eve at Rye at the Life Saving Station, and the following day, the vessel made her way into Portsmouth with the help of the tug *Clara Bateman*. On 26 December the Captain returned for his family.

An account of the foregoing was reported in the annual report of the Life Saving Service for the years 1883-1884. This report was made by men who were well acquainted with the sea and seafarers, and the manner in which the report reads indicated that finding the seagoing family aboard *Rockaway* was most unusual even to them at the time.

Wives and children of the masters of the larger sailing ships of that era oftentimes accompanied the head of the family on the lengthy voyages, but did not go to sea as working members as did the crew of *Rockaway*.

JOHN A. CLUFF

Book Reviews

Originally by NATHANIEL BOWDITCH, [Alton B. Moody, Editor], *American Practical Navigator* (Washington, 1958). 10½" x 7½" x 2½", fabrikoid. 1,524 pages, approximately 4,500 figures, 2 folding charts and 4 colored star charts. U. S. Hydrographic Office, Government Printing Office, Superintendent of Documents and all authorized Sales Agents of the U. S. Navy Hydrographic Office. $6.25.

On 6 December 1958 a completely revised edition of *American Practical Navigator* (H. O. Publication No. 9) was released for sale by the Hydrographic Office. Not since 1880 when Commander Phillip H. Cooper (U.S.N.) undertook the revision of *Bowditch,* which had been printed up to that time with the original stereotype plates purchased from George W. Blunt in 1867, has this compendium undergone such major changes.

The Hydrographic Office first announced its intention to revise *Bowditch* over a decade ago. Since that time the professional navigators and yachtsmen, along with the small-boat enthusiasts, and others who have occasion to refer to the book, have anxiously waited for its release. Many delays in the final printing date occurred, and the new edition was unavoidably postponed due to errors discovered by proofreaders and others responsible for its revision and publication. All the delays have been warranted and in accord with the original intent and purpose of publishing this valued compendium for over a century and a half—*to keep in the hands of the American merchant and naval officers a tome of navigation that can and does merit the confidence of those who use it.*

The 1958 edition of *American Practical Navigator* is in all respects a 'Regiment of the Sea.' Neither Nathaniel Bowditch, compiler and editor of the original American edition, nor, Edmund March Blunt, copyright holder and proprietor, would recognize the book as it appears today. Nevertheless, the work will always be a monument to them.

E. M. Blunt printed his first pirated edition of John Hamilton Moore's *Practical Navigator* at Newburyport, Massachusetts, in 1799. Blunt offered it to the American seamen as the *New Practical Navigator* and it was printed in two editions up to the year 1800. On the title page of both editions it was stated that the book had been corrected by a 'Skilful Mathematician and Navigator,' but Blunt did not identify this skilful person as Nathaniel Bowditch until 1800. The first change in the book's title occurred in 1802 and it was at this time that Bowditch's name first appeared on the title page as author of *New American Practical Navigator.* Thus, ending the anonymity of a navigation manual that was to replace Moore's work which had been in popular use since 1772.

From 1799 to 1837 Nathaniel Bowditch edited and proofread the *Navigator* for Blunt. He was rewarded for carrying out those time-consuming tasks in receiving a percentage of the total sales of the book. Bowditch died at Boston, Massachusetts,

on 16 March 1838; his eldest son, J. Ingersoll Bowditch, then assumed the responsibility of editing and proofreading the *Navigator*.

After 1838, for reasons known only to the proprietor and editor of *Bowditch*, many noteworthy improvements to the art of navigation were excluded from its pages. Outstanding among the discoveries and improvements to the art, and not given notice, was Captain Thomas H. Sumner's *New and Accurate Method of Finding a Ship's Position at Sea*. This discovery, which subsequently became known as the Sumner Line of Position, was made in 1837 and published at Boston in 1843. However, *Bowditch* continued to plug its several methods of working lunars.

From 1802 to 1867 *New American Practical Navigator* was printed in thirty-five editions, comprising thirty-nine separate printings. E. M. Blunt and his sons Edmund and George printed these editions at Newburyport, Massachusetts, and New York under the firm names of *E. M. Blunt, E. & G. W. Blunt* and finally as *Blunt & Nichols*.

If it had not been for the aggressiveness on the part of George W. Blunt, his friends high in the Department of the Navy and his canny maneuvers in Congress (Blunt had the reputation of being a master in organized lobbying), it is doubtful that the Hydrographic Office would be publishing *Bowditch* today. Another interesting fact is that the wording of a lengthy memorial addressed to Gideon Wells, then Secretary of the Navy, and signed by men such as Aspinwall, Grinnell, Morrison, Howland and others (all influential names connected with commerce, shipping and banking), praying that the Navy Department buy the copyright of *Bowditch* and print it for the use of American seamen at the cost of paper and printing, was strangely similar to the wording of a section of the Act (U. S. Code, Title 5, sec. 458) which created the Hydrographic Office.

Blunt's dogged determination to sell his copyright to the government finally ended by Gideon Wells, who was a close friend of Blunt, appointing a board on 12 September 1867 to appraise the copyright. In October 1867 Thornton A. Jenkins, Chief of the Bureau of Navigation, wrote to Blunt and advised him that the board's appraised value of his copyright was $25,000. This amount was paid to Blunt. and an additional sum of $4,500 was also paid for his stereotype plates used in the printing of the book. The sale of the copyright brought an end to the privately printed editions of *Bowditch*.

Under the direction of the Hydrographic Office *Bowditch* has been revised and printed numerous times. The first government printing was much the same as Blunt's thirty-fifth edition which was printed in 1867. When the work was revised in 1880 its title was changed to *American Practical Navigator* and this title has remained unchanged for over three quarters of a century. Other revisions occurred in 1887, 1903, 1914, 1923, 1926, 1928, 1930 and 1938. Up to the 1938 revision the government had printed *Bowditch* fifty times.

The 1958 edition is completely different from all previous printings and Commander Alton B. Moody (U.S.N.R), the editor of the revised edition, states that nothing is carried over from the earlier editions. Both the physical appearance and context of the new edition have indeed changed completely. Where former editions discussed distance in miles and yards, the new edition measures distance in microseconds. A great deal of knowledge, time and effort have gone into the preparation of the latest *Bowditch*. No detail was overlooked in making it the best to date. Even the type of paper used in the printing, it is said, was given critical examination as to

its quality, thickness and its characteristic of being able to withstand use in the humid atmosphere encountered at sea. Its cover has also changed and it is now bound in a dark blue fabrikoid; a material that gives the book a good appearance; it has a high resistance to mold and mildew, and it can be wiped clean with a damp cloth.

Prodigious would be an appropriate adjective to use in describing the contents of the new *Bowditch*. Its scope is so vast, covering almost all of the related fields in navigation, hydrography and oceanography, that almost any review would be inadequate. Before bringing the contents under discussion it should be pointed out to the readers of NEPTUNE that due to the tremendous amount of material that the book contains, much of the subject matter will necessarily be passed over or mentioned briefly.

Appropriately enough the new edition opens with a biographical sketch on the life of Nathaniel Bowditch. Those who are unfamiliar with his life will find that enough has been written in this sketch to give them an insight into the background of this great man. As usual Edmund M. Blunt and his sons, who kept *Bowditch* before the public in numerous revised editions for almost three quarters of a century, are *again* passed over. On page four where it is stated, 'The first edition of *The American Practical Navigator* was published in 1799 . . . ,' it should read—The first edition of *The New Practical Navigator* was published in 1799. Preceding the biography is a photograph of Gilbert Stuart's unfinished portrait of Bowditch painted in 1827.

Following the Preface and Contents is a lengthy *History of Navigation* which makes up chapter one of Part One. Forty-seven pages are devoted to this history, and it is an unusual departure in a government publication of this sort to find so much space alotted to such an interesting subject. If one is allowed conjecture it is safe to say that many an 'Old Man' will find his mates reading over this section in the chartroom when, perhaps, they should be attending to other duties.

The history is well written and it is enlivened by many good photographs of the early marine instruments, and some early charts and maps are reproduced. This chapter, as is the case with many of the other chapters in the book, gives a list of additional reference material on the subject under discussion. Readers of NEPTUNE will be happy to learn that it is included as a reference source for further reading on maritime history. *The Mariner's Mirror* should also have been included in this list.

Although it might seem ungracious to dwell upon the minor demerits of this history, or the book as a whole, nevertheless its errors must, in the interests of accuracy, be pointed out. On page 21 another variant in the spelling of the name Lucas Janszoon Wagenaer will be found. This is nothing new in itself, but his book *Spieghel der Zeevaerdt* is misspelled to read *Speighel der Leevaeret*. Page 34, where it is stated that the Diego Garcia de Palacio's *Instrucion Nauthica* was published in 1559 it should read instead, 1587. On page 42, it states that in using the Davis Backstaff, '. . . the sum of the values on each arc was the altitude of the sun,' whereas, the sum of the arcs usually gave the complement of the altitude.

Part Two, *Piloting and Dead Reckoning*. This Part is divided into four chapters covering instruments, compass error, dead reckoning and piloting. Instruments from dividers to the gyrocompass are described and, here again, numerous illustrations and photographs are used to further help in the descriptions of these instru-

ments. The chapter on Compass Error comprises fifty-five pages and the subject of magnetism is thoroughly explained.

It is in this Part the reader will first notice the slant towards the 'navy way' of doing things. Especially it will be found evident in the chapter on Piloting where the title *Practical Navigator* is not apropos to the practical methods of piloting. Coming to anchor with three or four assistants taking bearings, sextant angles, etc., is certainly not standard procedure for practical pilots.

Part Three, *Electronic Navigation*. Four chapters are devoted to this rather recent development in the art of navigation. Starting with the theory of electronics it proceeds to discuss its various applications to the art itself. The last two chapters in this Part describe the various electronic systems used in navigation. Chapter twelve of this Part is particularly interesting as it describes all the methods employed in finding distance and direction by electronics.

Part Four, *Celestial Navigation*. This is the largest section of the new edition and it is made up into nine chapters comprising 242 pages. It will be found to be a familier Part to those who have used the previous editions. However, almost nothing has been carried over from the earlier editions. It has been completely rewritten, all extraneous matter has been removed; new material has been added and in general the whole subject has been written to conform with up-to-date methods. Where previous editions devoted much space to the old Time Sight and Cosine-Haversine methods of navigation, emphasis is now on the various new methods of working the Line of Position and Altitude Intercept. The *Air Almanac* is described, H. O. 214 and 249 as well as the other new methods of working Altitude Intercept are explained, nothing of interest to the navigator will be found wanting in this Part. In all a hundred or more methods of solving latitude and longitude are described or mentioned. This Part also contains four colored star charts with transparent overlays which have been bound in as an integrate part of the whole and will be found useful in star identification.

Part Five, *The Practice of Navigation*. Seven chapters in this Part are devoted to the application of all the subjects that were previously discussed to the art of navigation itself. The subjects of polar and submarine navigation are also gone into to some extent. Outstanding in interest in this Part are the chapters on Lifeboat Navigation and Navigational Errors. Readers who were familiar with Gatty's book on *Raft Navigation*, which was to be found in waterproof editions in most lifeboats during World War II, will find much similar material in the new *Bowditch* in the chapter on Lifeboat Navigation. The chapter on Navigational Errors has clearly stated the inaccuracies, or rather the lack of precision in celestial fixes and the reasons therefor, showing somewhat the fallacy of being overly careful in taking and computing celestial observations.

Commander Moody states this chapter on Navigational Errors is a first for publication in a navigation manual. To the best of my knowledge his statement is correct, however, *The Journal of The Institute of Navigation* (London, England) has published from time to time many outstanding papers on these navigational errors. This reviewer has found this particular chapter of the utmost interest. Having many years of experience as a navigator and the responsibility of command I was amazed, after reading this chapter, at my lack of knowledge concerning this particular phase in the art of navigation.

Part Six, *Oceanography*. Part Six is also made up of seven chapters and will be found to contain a mine of information on oceans, tides and tidal currents, ocean currents, ocean waves, sound in the sea and ice, and many other subjects closely related to oceanography.

Part Seven, *Weather*. Weather is discussed in three chapters. Here will be found a very good reference for those who are coöperating at sea by submitting weather data to the Bureau. A sign of the times was noted inasmuch as the sails carried by a full-rigged ship in the designation of the Beaufort Scale numbers have been eliminated.

In reading this chapter it was found necessary to refer to the Beaufort Scale in the appendix for the equivalent in knots. This is rather curious since elsewhere in the text it mentions that the Weather Bureau has discontinued the use of the Beaufort Scale in favor of knots.

Part Eight, *The Production of Charts*. Five chapters are devoted to this Part. It was found to be very interesting reading. The reader is carried along in the text from the actual field survey to the printing press in the production of charts. A great many of the instruments used in hydrographic surveying as well as oceanic surveying are described and illustrated with diagrams and pictures.

Appendices. Following the Eight Parts, which contain forty-four chapters covering almost a thousand pages, are twenty-nine appendices. If it were not for the fact that the first eight parts are laden with a multitude of useful reference material, one would be inclined to say that the appendices make up the most important part of the whole. Ten of the appendices contain extracts from the various Hydrographic Office publications that are used by navigators for solving latitude, longitude, azimuths and the rising and setting of planets, etc.

Where, for centuries, the subject of mathematics was always to be found in the first part of navigation books, it is now included as an appendix in the 1958 edition of *Bowditch*. A list of Maritime Positions, which have been revised, is still a part of *Bowditch*. One of the appendices is a Glossary which is an abridgement of H. O. 220 *Navigation Dictionary*. Information on the names and pronunciation of the stars and their location in the celestial sphere is another, among the many, useful appendices.

Other appendices include reference material pertaining to chart symbols, tidal data, wind, work forms, buoyage systems and miscellaneous data. One of the most useful appendices, in my opinion, is the Long Term Almanac. Sailing on a long voyage prior to the Hydrographic Office's issuance of the latest *Nautical Almanac* was always a matter of some concern. Now with the methods of extracting the needed astronomical data from out-of-date almanacs given in the new *Bowditch* makes the lack of a current *Almanac* of little import.

Tables. Following the appendices are thirty-four tables preceded as usual by an explanation. Some of the tables found in previous editions have been eliminated and others have been added. Table III, Traverse Table, is one of the frequently used tables that have undergone streamlining. Most of the popular tables have kept their old numbers, but in general the new *Bowditch* will require a lot of use before the navigator will feel 'at home' among the tables.

An outstanding feature in the new revision is the book's index. It is comprised of sixty-eight pages, and the cross references make it an easy task to locate the desired information.

In conclusion the reviewer can find no words more appropriate to sum up the 1958 revised edition of *American Practical Navigator* than was penned by the Rev. Alexander Young, one hundred twenty years ago! 'The *Navigator* has never been superceeded. It has kept pace with the progress of nautical science, and incorporated all its discoveries and results; and the latest edition contains new tables and other improvements, which will secure its undivided use by our seamen for years to come.'

Cristobal, C. Z. JOHN F. CAMPBELL, MASTER MARINER

M. S. ROBINSON, Compiler, *Van de Velde Drawings. A Catalogue of Drawings in The National Maritime Museum* (Cambridge: Cambridge University Press, 1958). 10" x 12½". 451 pp. 169 plates. $40.00.

Concise Catalogue of Oil Paintings (London: Her Majesty's Stationery Office, 1958). 5" x 7". 121 pp. 6*s*.

H. O. HILL and E. W. PAGET-TOMLINSON, Compilers, *Instruments of Navigation, A Catalogue of Instruments at The National Maritime Museum, with notes upon their use* (London: Her Majesty's Stationery Office, 1958). 5" x 7". 90 pp. Illus. 4*s* 6*d*.

The recent publication by The National Maritime Museum of three catalogues is an event to be hailed by all nautically minded persons. One could only wish each was of the same quality. That covering the Van de Velde drawings owned at Greenwich is superb in every respect: the infinite research behind each entry is obvious and gives visible proof of the high repute Mr. Robinson so deservedly enjoys; the bookmaking is excellent and the collotype reproductions of the two hundred-odd drawings chosen from the seven hundred in the collection present much of the feel of the originals. Each item is carefully described in a standardized terminology which in turn is defined in an extensive glossary. The identification of events and scenes, vessels and places, as well as dates have been determined with accuracy, and comparisons are made with other Van de Velde collections, public and private. To the catalogue itself Mr. Robinson has added biographies of the two Van de Veldes and an analysis of their work methods. Perhaps of even more importance to students of the seventeenth- and eighteenth-century maritime art are the sections of the book, fully illustrated, which give many of the tools with which the identifications of vessels and the dating have been decided. These are the arms and other heraldic devices shown in the carved and painted decorations of the vessels, and a series of drawings by Mr. Gregory Robinson illustrating the changes made in the hull structure, spars, and rigging down to the nineteenth century with the dates, when through orders, they became official. All future catalogues of a maritime nature could well be patterned on Mr. Robinson's work.

One wishes at least some praise could be given the Catalogue of Paintings. It is as deficient as the Van de Velde catalogue is good. The anonymous compiler has failed to include the dates when paintings were executed even when known. He is equally remiss with the nationality of the vessels depicted. For example, of what value is an entry such as 'Flying Cloud, ship. Artist unknown. 18 x 23½. Neg. 258.'? Is this the American clipper, or one of the many vessels named for her? Is the painting

something reproduced on the cover of a magazine or is it contemporary? Of what help is an entry 'Canton. Artist unknown. 37 x 74½.'? Perhaps we can forgive the compiler for not being aware that a part of what is now the port area of Baltimore, Maryland, was originally named 'Canton,' but, assuming the Chinese city, at least we could have been told whether the artist was an Asiatic or an Occidental and the approximate date. Nor are the entries consistant, thus 'Bertie, Robert, Earl of Lindsey' forces one to 'See Lindsey, Earl of' but 'Cochrane, Thomas, 10th Earl of Dundonald' stands on his own feet without skipping through the alphabet to 'Dundonald.' One hopes any catalogue of the water colors or prints and future editions of this will more nearly follow the comparatively inexpensive catalogues of paintings issued by The Mariners' Museum, The Peabody Museum, or The Kendall Whaling Museum.

The last catalogue, that of the Instrument Collection, while by no means on the scale of the Van de Velde catalogue is an excellent piece of work. The compilers, Commander H. O. Hill and Mr. E. W. Paget-Tomlinson have given very thorough descriptions of each piece together with biographical notes on the makers whenever possible. Each section is preceded by a brief statement on the uses, the construction and mathematical basis of the instruments themselves. The illustrations, reproducing explanatory diagrams and photographs of actual instruments are well selected and adequate.

M. V. BREWINGTON

Peabody Museum of Salem

ARCHIBALD R. LEWIS, *The Northern Seas: Shipping and Commerce in Northern Europe* A.D. 300-1100 (Princeton: Princeton University Press, 1958). 6¼″ x 9½″, cloth, xxi + 498 pages, 5 maps. $9.00.

LIONEL CASSON, *The Ancient Mariners: Seafarers and Sea Fighters of the Mediterranean in Ancient Times* (New York: The Macmillan Company, 1959). 5½″ x 8½″, cloth, xxii + 286 pages, 6 figures, 16 plates, 4 maps. $5.95.

There have been few studies of ancient and medieval shipping and commerce in modern times. Some interesting works are now appearing, however, in this long neglected area. The two books here reviewed are among the most important and entertaining contributions to this field.

Professor Lewis' book is a sound, well-documented study of the little-known and surprisingly extensive maritime activities in the period usually called the 'Dark Ages.' Actually modern research in many fields is showing more and more that the age is rather unstudied than dark. He traces in great detail the slow development of northern European commerce from rude beginnings in the fourth century, through the Carolingian revival, the Viking explosion, the English Kingdoms, and the domination of the Danes, to the beginning emergence of European nationalism in the twelfth century. This fact-packed book is difficult to read, but invaluable for reference.

By no means difficult to read is the fast-moving, entertaining book of Professor Casson. This is, without doubt, the only book ever written on the subject of ancient maritime history that can be read for pleasure. The author ranges widely and

easily over the Mediterranean discussing a variety of hitherto little-known subjects. The large size of ancient Egyptian, Greek and Roman ships will come as a surprise to many, as will the number of vessels involved in naval actions of those times. Such problems as Jason's voyage, the arrangement of oars in triremes and larger vessels, and the seamanship of Greeks, Romans and Carthaginians are clarified as they have never been before. Unlike other writings we have seen on this subject, Greek and Latin nautical terms are relegated to a glossary where they can be found if needed, but do not clutter up the text. The illustrations are well selected and helpful. No mention is made that part of Chapter 15 appeared as an article in THE AMERICAN NEPTUNE.

Lionel Casson is the gifted master of a clear, lucid style. He is also the leading authority in this field of maritime history and a sailor himself. His book then, while not documented in great detail, is authoritative as well as entertaining. His facility in describing ancient shipping in modern terms gives his work life. Professor Casson speaks with the voice of a sailor as well as an historian. It is no easy task to write a book that appeals to sea lovers as well as classicists.

THOMAS WOODROOFFE, *Vantage at Sea: England's Emergence as an Oceanic Power* (New York: St. Martin's Press, 1958). 6" x 9¼", 301 pages, 15 plates, 5 maps. $5.50.

The glorious emergence of English sea power during the age of Elizabeth I has been the subject of many works. This book adds nothing really new, although it devotes more space to the Spanish point of view than usual.

Mr. Woodrooffe tells again the dramatic stories of raids and cruises by Drake and Hawkins, of the search through icy seas for the Northwest Passage by Frobisher and Davis, and the glorious climax when the vast Armada was smashed by new, long-range gunnery tactics and England's shores were safe from invasion.

The story is well told and makes good reading, but the serious student will go back to better documented sources.

R. W. K. HINTON, *The Eastland Trade and the Common Weal in the Seventeenth Century* (Cambridge: Cambridge University Press, 1959). 5¾" x 8¾", xii + 244 pages. $6.00.

This is a thorough, well-documented historical study with important maritime aspects. The active English trade in cloth and grain with the Baltic and Scandinavian seaports is discussed in great detail. The story of the rise, life, and deterioration of the little-known Eastland Company is well told. The book is supplemented by three valuable appendices giving documents relating to the Eastland Company and a list of some of the members who exported broadcloth in company ships. This well-done work is a useful addition to the growing body of literature on one of the most active periods in English maritime history.

H. PHILIP SPRATT, *The Birth of the Steamboat* (London: Charles Griffin & Co., Ltd., 1958). 5½" x 8", 149 pages, 11 plates. 28*s* 0*d*.

Mr. Spratt is one of the leading authorities on the development of steamboats

and early steamboating. His work is well known to steamship historians, and the present small volume is another of his thoroughly professional, useful products. The book is well illustrated, documented and indexed, and is actually a catalogue of pioneer steamboat builders, the inventions and improvements made by them, and a brief account of the vessels they experimented with. The author devotes considerable space to discussing details of boilers, engines and other mechanical features. This is a book the steamboat enthusiast will welcome, and a fact-packed, handy reference manual on the subject.

WILLIAM A. BAKER, *The New Mayflower, Her Design and Construction* (Barre, Mass.: Barre Gazette, 1958). 6" x 9", cloth, xiv+164 pages, 19 figures, 8 plates, 4 folding plans in pocket. $8.00.

This book gives in great detail the history of the designing and construction of the reproduction of *Mayflower* which, as we all know, so successfully crossed the Atlantic in 1957. The author, who for years had made an intensive search through European and American archives, is the man who actually did the designing and by long-range commuting from his home in Hingham to the shipyard in Brixham, England, supervised the construction. Anyone interested in late sixteenth- and early seventeenth-century shipbuilding will save himself much time by using the copious notes and bibliography given in the book and any model builder who wishes to demonstrate his skill will find all the detailed drawings, sketches, and reproductions of photographs that his soul could desire. Regrettably no index has been provided. The book is well and attractively made and strong enough to withstand the rigors of workshop use. Much of this material originally appeared as articles in THE AMERICAN NEPTUNE.

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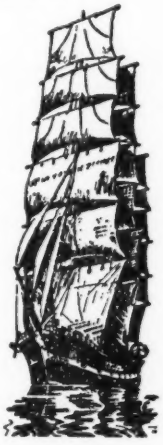

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